FEM 1.209: 245208/1989/V.1

OCT 1 1989

# FLOOD INSURANCE STUDY

## PRINCE GEORGE'S COUNTY, MARYLAND

### UNINCORPORATED AREAS

### VOLUME 1 OF 3

REVISED:
DECEMBER 15, 1989

Federal Emergency Management Agency

COMMUNITY NUMBER - 245208

Hgw

## NOTICE TO
## FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program (NFIP) have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

Part or all of this FIS may be revised and republished at any time. In addition, part of this FIS may be revised by the Letter of Map Revision (LOMR) process, which does not involve republication or redistribution of the FIS. It is, therefore, the responsibility of the user to consult with community officials and to check the community repository to obtain the most current FIS components.

Initial Flood Insurance Study Effective Date: August 4, 1972

Flood Insurance Study Revised: July 1, 1974

August 28, 1976

July 19, 1982

June 18, 1987

December 15, 1989

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Flood Boundary and Floodway Map

PUBLISHED SEPARATELY:

Flood Insurance Rate Map Index
Flood Insurance Rate Map

# FLOOD INSURANCE STUDY
# PRINCE GEORGE'S COUNTY, MARYLAND

## 1.0 INTRODUCTION

### 1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the unincorporated areas of Prince George's County, Maryland, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood risk data for various areas of the community that will be used to establish actuarial flood insurance rates and assist the community in their efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the state (or other jurisdictional agency) will be able to explain them.

### 1.2 Authority and Acknowledgments

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for the first revision represent a revision of the previous study performed by the Baltimore District of the U. S. Army Corps of Engineers (COE) for the Federal Emergency Management Agency (FEMA). That work was completed in June 1980.

The hydrologic and hydraulic analyses for the first revision were prepared by Greiner Engineering Sciences, Inc., for FEMA, under Contract No. EMW-C-0946. That revised work was completed in December 1984. The hydrologic and hydraulic analyses for Pea Hill Branch, prepared by the Washington Suburban Sanitary Commission, and information on approximate flooding, prepared by the Prince George's County Stormwater Management Technical Group, were also incorporated in this study.

The hydraulic analysis for Indian Creek in this second revision were prepared by Greenhorne & O'Mara, Inc., for FEMA. The work for this revision was completed in September 1988.

### 1.3 Coordination

In June 1982, streams requiring detailed and approximate study were identified at an initial Consultation and Coordination Officer's (CCO) meeting attended by representatives of FEMA, Prince George's County, and Greiner Engineering Sciences, Inc. (the study contractor). During the course of the study, county officials and interested individuals were contacted to discuss flood protection structures that had been or will be built. On January 16, 1986, the results of study were reviewed at a final CCO meeting held with representatives of FEMA, the county, and the study contractor.

## 2.0 AREA STUDIED

### 2.1 Scope of Study

This Flood Insurance Study covers the unincorporated areas of Prince George's County, Maryland. The City of Laurel is not included in this study. The area of study is shown on the Vicinity Map (Figure 1).

The following streams were studied by detailed methods:

| Stream | Limits of Detailed Study |
|---|---|
| Potomac River | For its entire length within the county. |
| Piscataway Creek | From its confluence with the Potomac River to approximately 100 feet upstream of State Route 223 (Woodyard Road). |
| Tinkers Creek | From its confluence with Piscataway Creek to the confluence of Meetinghouse Branch and Paynes Branch. |
| Pea Hill Branch | From its confluence with Tinkers Creek to approximately 120 feet upstream of Old Branch Avenue. |
| Burch Branch | From its confluence with Piscataway Creek to approximately 180 feet upstream of Springfield Road. |
| Meetinghouse Branch | From its confluence with Tinkers Creek to approximately 80 feet upstream of State Route 5. |
| Broad Creek | From its confluence with the Potomac River to the confluence of Henson Creek and Hunters Mill Branch. |

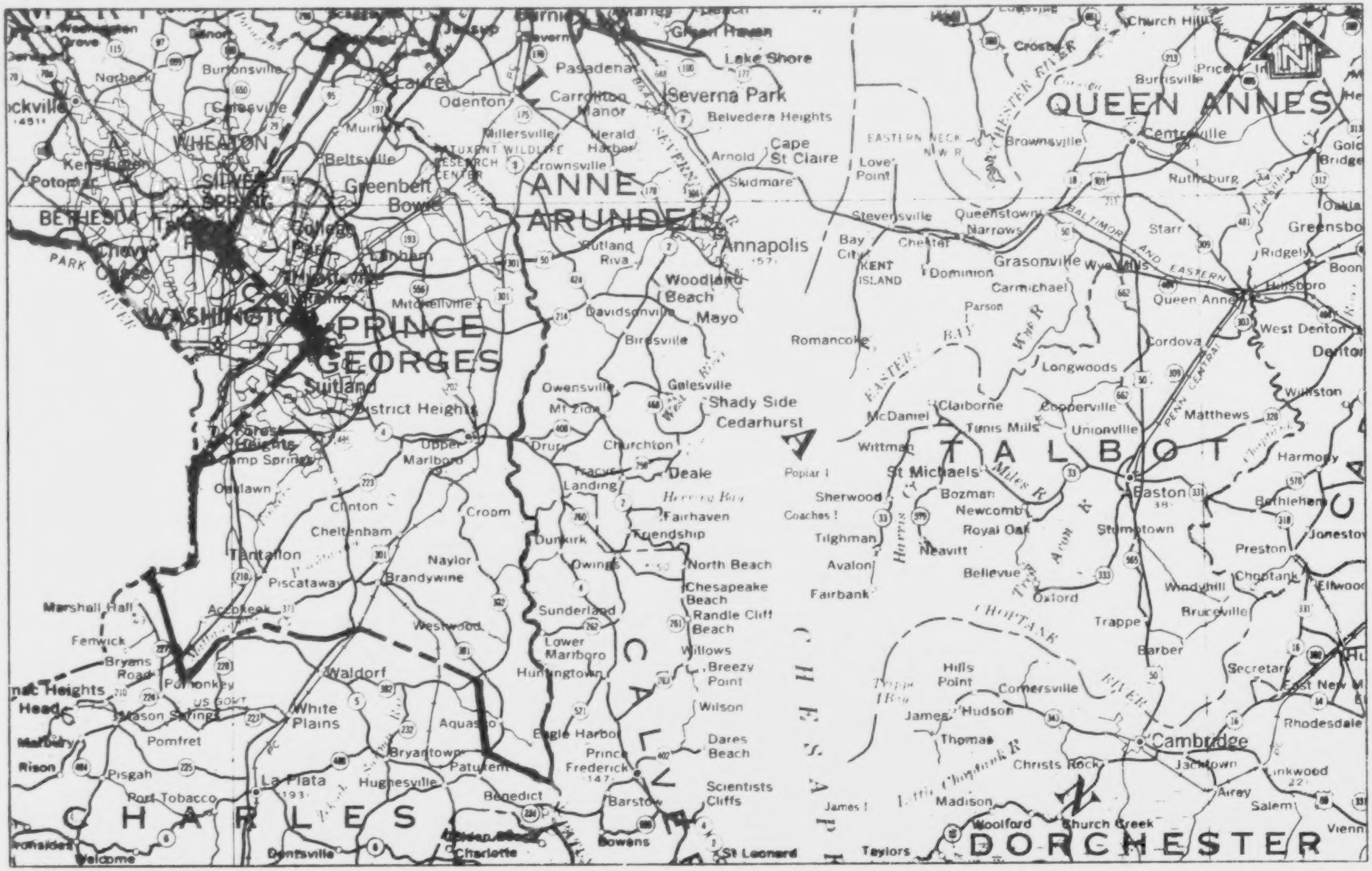

QUEEN ANNES
ANNE ARUNDEL
PRINCE GEORGES
WASHINGTON
BETHESDA
WHEATON
SILVER SPRING
TALBOT
CALVERT
CHARLES
DORCHESTER
CHESAPEAKE
Annapolis
Laurel
Bowie
Greenbelt
Upper Marlboro
Suitland
District Heights
Clinton
Piscataway
Accokeek
Brandywine
Waldorf
La Plata
Easton
Cambridge
St Michaels
Centreville
Severna Park
Deale
North Beach
Prince Frederick

FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

**(UNINCORPORATED AREAS)**

**APPROXIMATE SCALE**

8 0 8 16 24 MILES

**VICINITY MAP**

| | |
|---|---|
| Henson Creek | From its confluence with Broad Creek to just upstream of Interstate 95. |
| Hunters Mill Branch | From its confluence with Broad Creek to approximately 1.3 miles upstream. |
| Unnamed Tributary to Broad Creek | From its confluence with Broad Creek to approximately 1.6 miles upstream. |
| Mattawoman Creek | From the downstream county boundary to approximately 5,000 feet upstream of the U. S. Route 301 bridge. |
| Timothy Branch | From from its confluence with Mattawoman Creek to approximately 0.25 mile upstream of State Route 381. |
| Oxon Run | From its confluence with the Potomac River to the confluence of Barnaby Run and from approximately 1,200 feet downstream of 23rd Parkway to approximately 0.25 mile upstream of State Route 4. |
| Patuxent River | From the downstream county boundary to the downstream side of Rocky Gorge Dam. |
| Western Branch | From its confluence with the Patuxent River to the confluence of Bald Hill Branch and Lottsford Branch. |
| Collington Branch | From its confluence with Western Branch to approximately 0.63 mile north of U. S. Route 50. |
| Charles Branch | From its confluence with Western Branch to approximately 150 feet upstream of State Route 223. |
| Southwest Branch | From its confluence with Western Branch to approximately 2.6 miles upstream of Ritchie Road. |
| Lottsford Branch | From its confluence with Western Branch to approximately 260 feet upstream of State Route 450. |
| Northeast Branch-Western Branch | From its confluence with Western Branch to approximately 280 feet upstream of Woodmore Road. |
| Folly Branch | From its confluence with Lottsford Branch to approximately 300 feet upstream of State Route 564. |
| Bald Hill Branch | From its confluence with Western Branch to approximately 1,000 feet upstream of Good Luck Road. |

| | |
|---|---|
| Federal Spring Branch | From its confluence with Western Branch to just upstream of Ritchie Marlboro Road. |
| Ritchie Branch | From its confluence with Southwest Branch to approximately 0.4 mile upstream of Ritchie Road. |
| Horsepen Branch | From its confluence with the Patuxent River to approximately 600 feet upstream of Hillmeade Road. |
| Bear Branch | From its confluence with Crows Branch to approximately 220 feet upstream of Contee Road. |
| Anacostia River | From the downstream county boundary to the confluence of the Northeast and Northwest Branches Anacostia River. |
| Northeast Branch Anacostia River | From its confluence with the Anacostia River to the confluence of Indian Creek and Paint Branch. |
| Northwest Branch Anacostia River | From its confluence with the Anacostia River to approximately 150 feet upstream of Piney Branch Road. |
| Paint Branch | From its confluence with the Northeast Branch Anacostia River to approximately 3,000 feet upstream of Powder Mill Road. |
| Indian Creek | From its confluence with the Northeast Branch Anacostia River to approximately 400 feet upstream of the second crossing of Interstate 95, and restudied from the first crossing of Interstate 95 to Sunnyside Avenue. |
| Beaverdam Creek | From the downstream county boundary to approximately 300 feet upstream of U. S. Route 50. |
| Little Paint Branch | From its confluence with Paint Branch to approximately 400 feet upstream of Greencascle Road. |
| Sligo Creek | From its confluence with the Northwest Branch Anacostia River to the upstream county boundary. |
| Brier Ditch | From its confluence with the Northeast Branch Anacostia River to approximately 0.4 mile upstream of the Baltimore-Washington Parkway. |
| Long Branch | From its confluence with Sligo Creek to the upstream county boundary. |

| | |
|---|---|
| Cabin Branch | From its confluence with Beaverdam Creek to approximately 200 feet upstream of State Route 214. |
| Ammendale Branch | From its confluence with Indian Creek to approximately 480 feet north of Virginia Manor Road. |
| Muirkirk Branch | From its confluence with Indian Creek to approximately 375 feet downstream of Ammendale Road. |
| Barnaby Run | From its confluence with Oxon Run to a point approximately 2,800 feet upstream. |
| Crows Branch | For its entire length affecting the county. |

Piscataway Creek, Tinkers Creek, Pea Hill Branch, Collington Branch, Southwest Branch, Northeast Branch Anacostia River, Northwest Branch Anacostia River, Paint Branch, Indian Creek, Beaverdam Creek, Little Paint Branch, and Sligo Creek were revised in the first revision. The Patuxent River was studied by detailed methods in the original study and was not revised in the first revision; however, flood boundaries were redelineated based on new topographic information.

In this second revision, Indian Creek was studied by detailed methods to incorporate the results of a more detailed hydraulic analysis.

Tidal flooding from the Chesapeake Bay and the Potomac River was also studied by detailed methods. The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction.

All or portions of the following streams were studied by approximate methods: the Patuxent River; Beaverdam Creek and an unnamed tributary; Beck Branch and an unnamed tributary; Walker Branch; North Fork Walker Branch; Cattail Branch; an unnamed tributary to Brier Ditch; House Branch; Carey Brook; Charles Branch; Meetinghouse Branch; several unnamed tributaries to Henson Creek; Oxon Run; Piscataway Creek and two unnamed tributaries; Pea Hill Branch; Paynes Branch; Unnamed Tributary No. 1 and its tributaries; Hunter Mill Branch; Carey Branch; Unnamed Tributary No. 2; Unnamed Tributary No. 3; Burch Branch; Butler Branch; Unnamed Tributary No. 4; Unnamed Tributary No. 5; Dower House Branch; Unnamed Tributary No. 6 and its tributaries; Mattawoman Creek and an unnamed tributary; Folly Branch and an unnamed tributary; Northeast Branch-Western Branch; Tributary to Northeast Branch-Western Branch; Unnamed Tributary No. 7 and an unnamed tributary; Federal Spring Branch; Unnamed Tributary No. 8; Ritchie Branch; Turkey Branch; Back Branch; Cabin Branch; Unnamed Tributary No. 9; Green Branch; Mill Branch; Mt. Nebo Branch; Honey Branch; Black Branch; Unnamed Tributary No. 10; Southwest Branch; Matapani Creek and an unnamed tributary; Unnamed Tributary No. 11; Unnamed Tributary No. 12; Black Swamp Creek; Zekiah Swamp Run and an unnamed tributary; County Line

Creek; Swanson Creek; Summerville Creek and an unnamed tributary; Full Mill Branch; Rock Branch; Rock Creek; Spice Creek; Tom Walls Branch; Hotchkins Branch; Tanyard Branch; Collington Branch; East Branch; Stanley Run; Wolf Den Branch; Unnamed Tributary to Broad Creek and its tributaries; Little Paint Branch; Indian Creek; Ammendale Branch; Paint Branch; Muirkirk Branch; Bald Hill Branch; Lottsford Branch; Horsepen Branch; Greenbelt Park Branch; Meetinghouse Branch; Henson Creek; Barnaby Run and an unnamed tributary; an unnamed tributary to Federal Spring Branch; and an unnamed tributary to the Potomac River. Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon by, FEMA and Prince George's County.

### 2.2 Community Description

Prince George's County is located in the south-central portion of Maryland. It is bordered by the unincorporated areas of Montgomery County, Maryland, Washington, D. C., the City of Alexandria, Virginia, and the unincorporated areas of Fairfax County, Virginia, to the west; the unincorporated areas of Howard County, Maryland, to the north; the unincorporated areas of Anne Arundel and Calvert Counties, Maryland, to the east; and the unincorporated areas of Charles County, Maryland, to the south.

The areas of Prince George's County in close proximity to Washington, D. C., have experienced, and continue to experience, significant population increases and development pressures. The extreme southern and eastern portions are still largely rural, except for localized areas such as Bowie and Upper Marlboro. Upper Marlboro is the county seat of Prince George's County. The population of the county increased from 360,000 in 1960, to 661,719 in 1970, and to 665,071 in 1980 (Reference 1).

Prince George's County consists of 485 square miles situated almost entirely within the Atlantic Coastal Plain. A small area along the Montgomery County boundary is in the Piedmont province. The Patuxent River forms the northern and eastern boundaries. The Piedmont is gently rolling to hilly and moderately dissected by broad, shallow valleys. The northern part of the Coastal Plain is gently rolling and has broad valleys; the rest is a partly dissected low plateau that extends south into Charles County. Approximately half the county drains east to the Patuxent River, while the remainder drains southwest through the Anacostia River and other streams to the Potomac River.

The area has a humid temperate climate with generally mild winters and warm, wet summers. The county experiences a wide range of temperatures, from a historic low of -26 degrees Fahrenheit (°F) to a high of 107°F. The average annual maximum and minimum temperatures are 67.4°F and 42.6°F, respectively. The average annual precipitation is 45 inches.

Sixty percent of Prince George's County is covered by woodland. Most floodplain areas of the Patuxent River are thickly wooded with red and white oaks, sweetgum, yellow poplar, and pines. Thickets consisting of short coarse grass, low shrubs, bushes, and small trees are characteristic of the tidal areas of the river.

The Patuxent River enters Prince George's County at Rocky Gorge Reservoir, north of the City of Laurel. Rocky Gorge Reservoir was constructed in 1954 by the Washington Suburban Sanitary Commission for water supply. As the river passes through Laurel, it is joined by Walker Branch. From Laurel south to the City of Bowie, there has been only minor alteration of the floodplain due to development. Most of the original physiography and woodlands remain. At Bowie, the Middle Patuxent River joins the Patuxent River. South of Bowie at Chalk Point, the Patuxent River has retained its natural state as a tidal estuary. This tidal area is important ecologically and consists of wide floodplains and swampy areas of brackish water.

The Patuxent River is of great historic significance to the settlement and development of southern Maryland, particularly Prince George's County. The river was one of the two major watercourses used to transport settlers and supplies by barge to the county. Harbor towns along the river developed rapidly in order to handle the trading and storage of tobacco, southern Maryland's principal crop. During the War of 1812, the Patuxent River was the scene of many fierce naval battles. In this war, a British invasionary force landed at Nottingham, a small settlement on the river in southern Prince George's County, and proceeded to Washington, D. C., where they burned the city. With the advent of the railroad, the importance and use of the river diminished. Many historic plantations and mansions remain as monuments to the significant contributions of the Patuxent River.

## 2.3 Principal Flood Problems

Due to the intense development pressures and resulting encroachment into floodplains, flooding has occurred throughout Prince George's County. Historically, flooding in the county occurs during the mid and late summer and is associated with tropical storms and hurricanes. During a major storm in August 1933, flood elevations reached 1 foot below the 100-year storm on the Anacostia River system, and residents near Piscataway Creek reported flooding over the Livingston Road bridge (Reference 2). In August 1955, Hurricane Connie reached an elevation 4 feet below the 100-year storm on Western Branch and inundated a large commercial section of Upper Marlboro (Reference 3). This storm also flooded some buildings on

Piscataway Creek (Reference 4). Other major storms causing severe flooding occurred in August 1971, September 1975 (Hurricane Eloise), and September 1979 (Hurricane David) (References 5 and 6).

The flood of record in the area occurred in June 1972 as a result of Tropical Storm Agnes, causing much flooding and varying degrees of flood related damage. Elevations and high-water marks in the Laurel area were recorded by the Washington Suburban Sanitary Commission in September 1971 and June 1972 (References 7 and 8). The recurrence interval of the September 1971 flood is between a 10- and 50-year flood, and the recurrence interval of the June 1972 flood is slightly greater than 100 years.

Several gaging stations are located in the area and were used in the preparation of this study. Table 1 lists these gages and provides pertinent information for them.

TABLE 1 - STREAM GAGES

| Gage No. | Drainage Area (sq. miles) | Location | Period of Record |
|---|---|---|---|
| 1645200 | 3.7 | Watts Branch near Rockville | June 1957-1983 |
| 1594600 | 3.85 | Cocktown Creek near Huntington | Dec. 1956-Sept. 1976 |
| 1646550 | 4.1 | Little Falls Branch near Bethesda | June 1944-Sept. 1959<br>Dec. 1961-Sept. 1978 |
| 1590500 | 6.92 | Bacon Ridge Branch at Chesterfield | Oct. 1942-Sept. 1952<br>Oct. 1974-Sept. 1979 |
| 1647720 | 9.73 | Rock Creek near Norbeck | Nov. 1966-Sept. 1975 |
| 1594400 | 11.6 | Dorsey Run near Jessup | July 1948-Sept. 1958 |
| 1653500 | 16.7 | Henson Creek near Oxon Hill | June 1948-Sept. 1978 |
| 1650500 | 21.1 | Northwest Branch Anacostia River near Colesville | Oct. 1923-Sept. 1983 |
| 1591500 | 22.9 | Cattail Branch at Roxbury Mills | June 1978-1983 |
| 1594500 | 30.2 | Western Branch, Patuxent River at Largo | Oct. 1949-March 1975 |
| 1591000 | 34.8 | Patuxent River near Unity | July 1944-1983 |
| 1593500 | 38.0 | Little Patuxent River at Guilford | April 1932-1983 |
| 1653600 | 39.5 | Piscataway Creek at Piscataway | Oct. 1965-1983 |
| 1651000 | 49.4 | Northwest Branch Anacostia River near Hyattsville | July 1938-1983 |
| 1658000 | 57.7 | Mattawoman Creek near Pomonkey | Nov. 1949-Sept. 1972 |
| 1648000 | 62.2 | Rock Creek at Sherill Drive in Washington, D. C. | Oct. 1929-1983 |
| 1649500 | 72.8 | Anacostia River at Riverdale | Aug. 1938-1983 |
| 1594000 | 98.4 | Little Patuxent River at Savage | Oct. 1939-Sept. 1958<br>Oct. 1975-Sept. 1979 |
| 1645000 | 101.0 | Seneca Creek at Dawsonville | Sept. 1930-1983 |
| 1643500 | 62.8 | Bennett Creek at Park Mills | July 1948-1983<br>Aug. 1966-1983 |

Figures 2-27 show potential 100- and 500-year flood heights at various locations within Prince George s County.

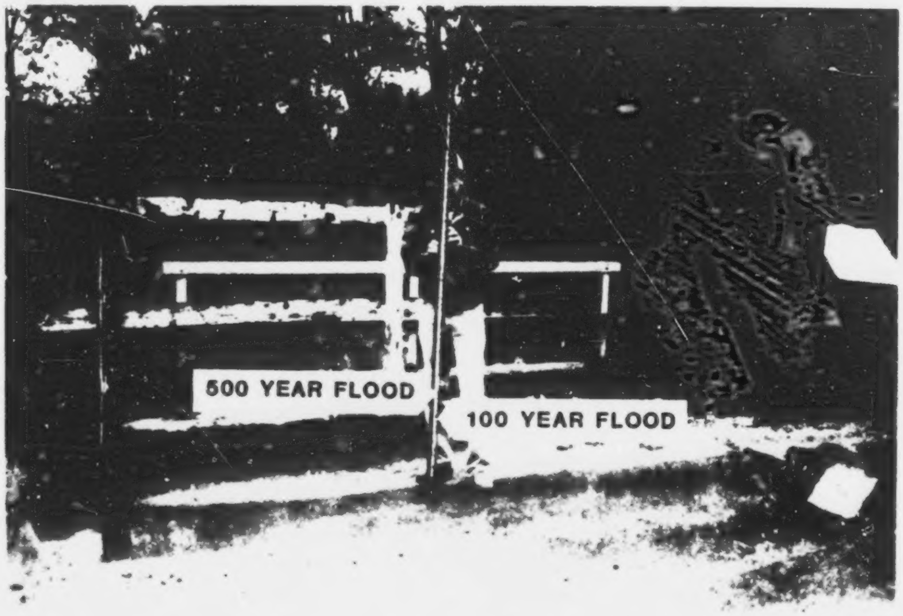

500 YEAR FLOOD
100 YEAR FLOOD

Figure 2 - Potential 100- and 500-year flood heights on Bear Branch at Contee Road, looking downstream.

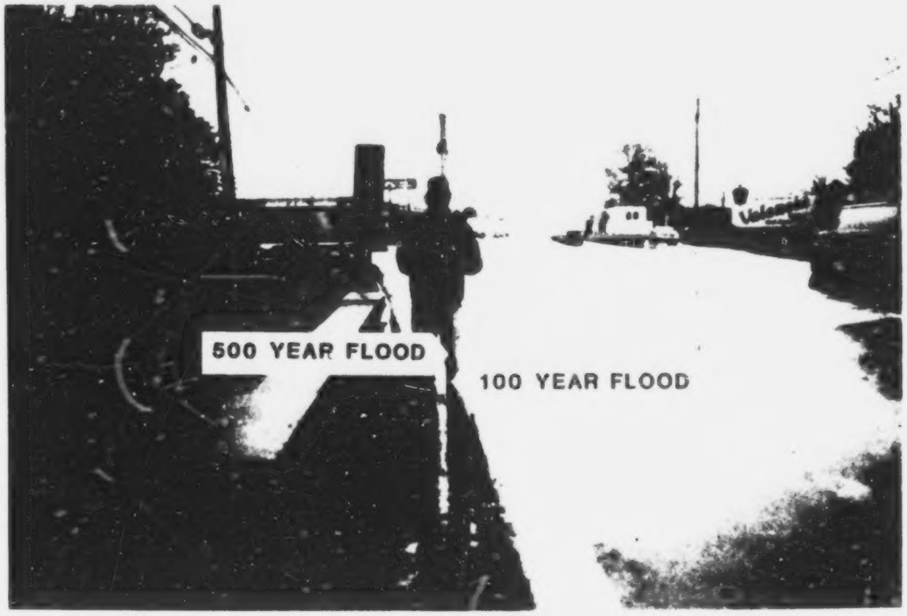

500 YEAR FLOOD
100 YEAR FLOOD

Figure 3 - Potential 100- and 500-year flood heights on Bear Branch at Baltimore Avenue, looking northeast on the upstream side.

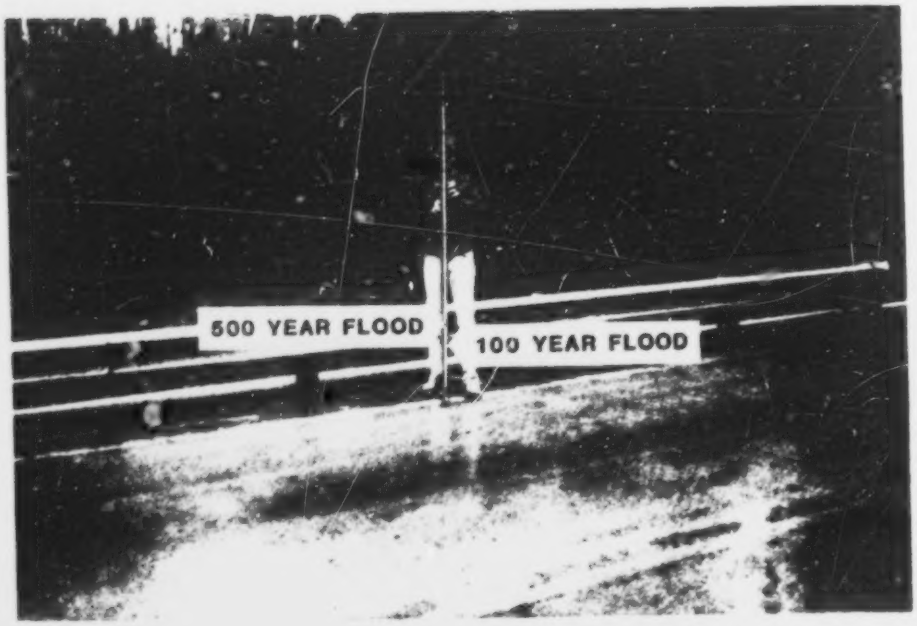

500 YEAR FLOOD
100 YEAR FLOOD

Figure 4 - Potential 100- and 500-year flood heights on Indian Creek at Sunnyside Road, looking upstream.

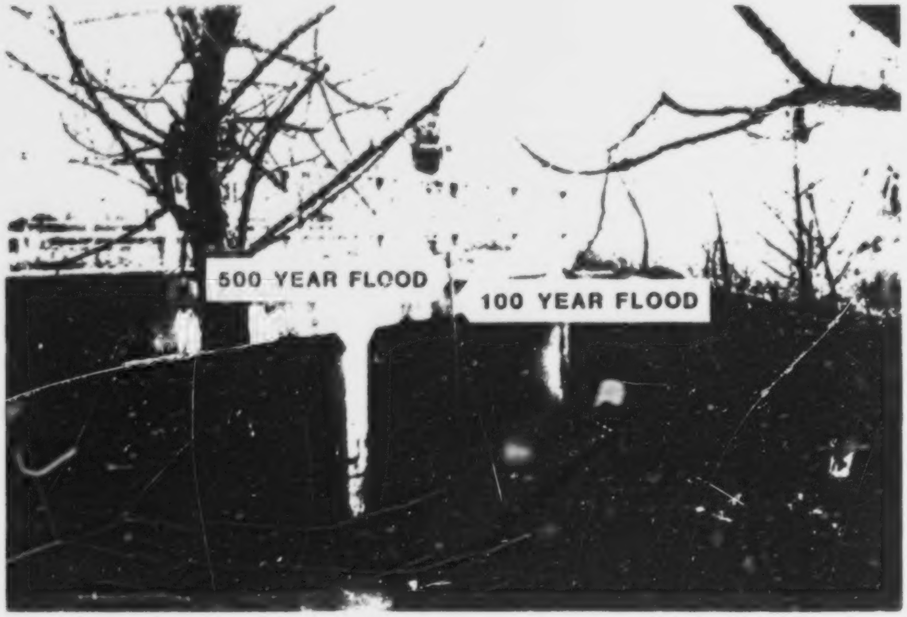

500 YEAR FLOOD
100 YEAR FLOOD

Figure 5 - Potential 100- and 500-year flood heights on Brier Ditch at Kenilworth Avenue, looking downstream (northwest).

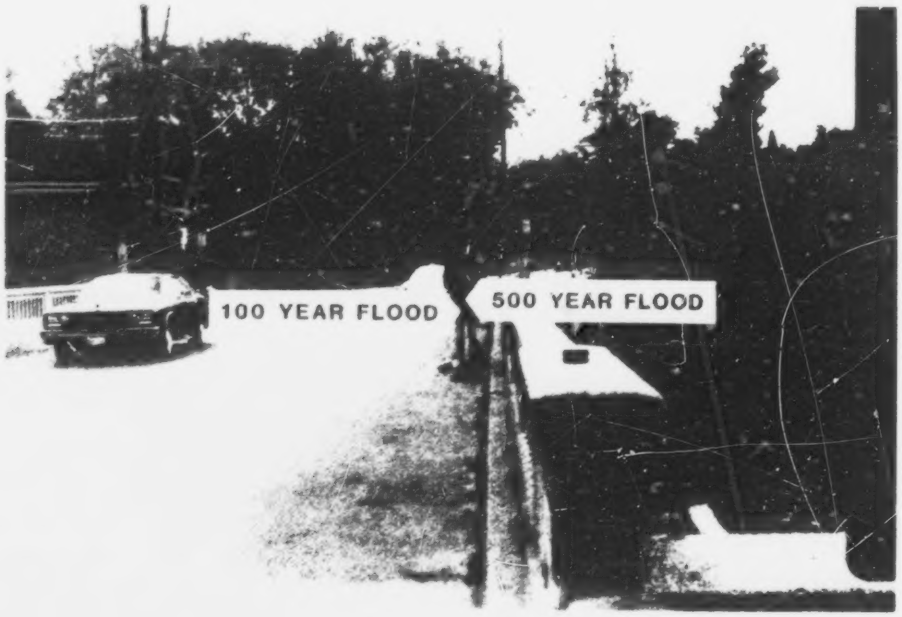

100 YEAR FLOOD
500 YEAR FLOOD

Figure [illegible]. Potential 100- and 500-year flood heights on the Northeast Branch Anacostia River at Riverdale Road, looking east on the downstream side.

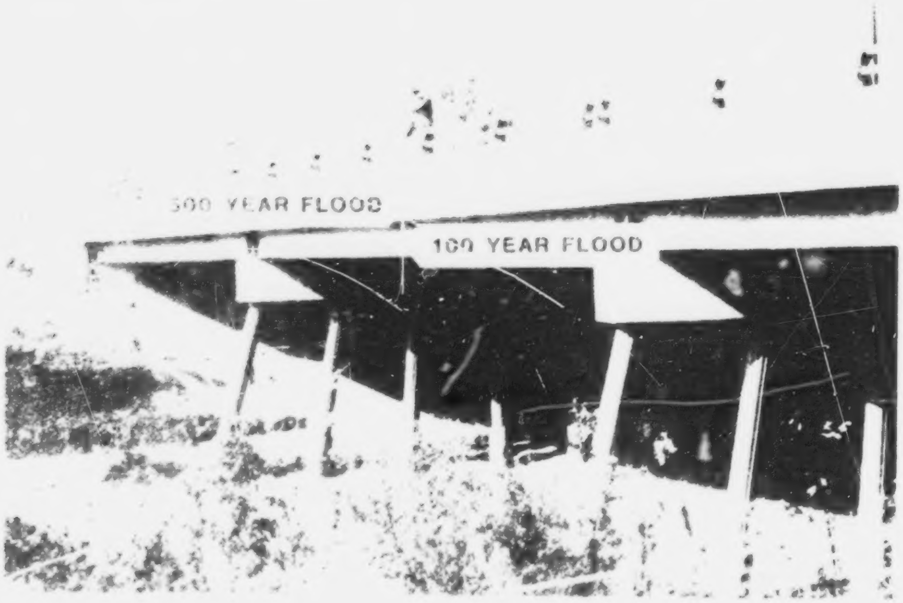

500 YEAR FLOOD
100 YEAR FLOOD

Figure [illegible]. Potential 100- and 500-year flood heights on the Northeast Branch Anacostia River at East-West Highway, looking upstream.

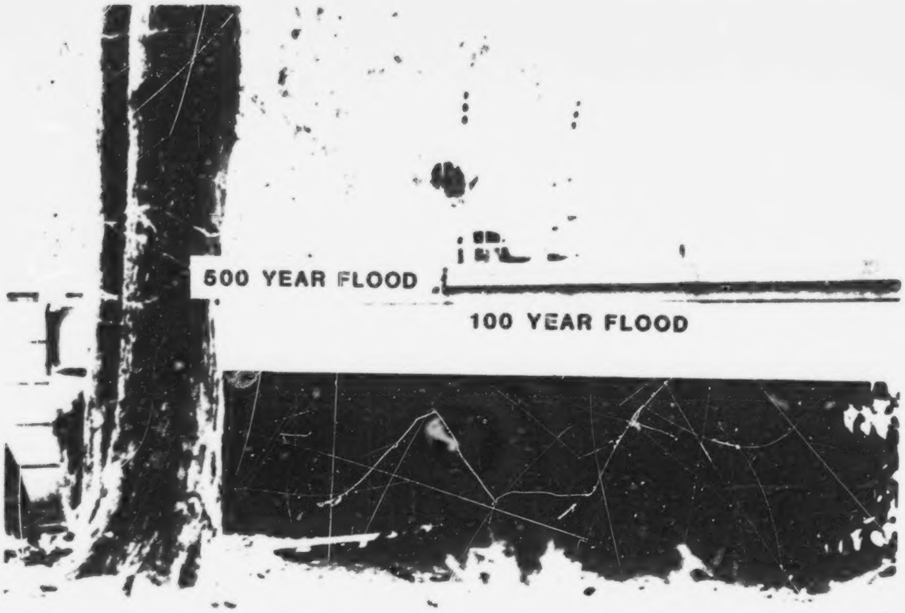

500 YEAR FLOOD
100 YEAR FLOOD

Figure 8 - Potential 100- and 500-year flood heights on Sligo Creek at New Hampshire Avenue, looking north from the downstream side.

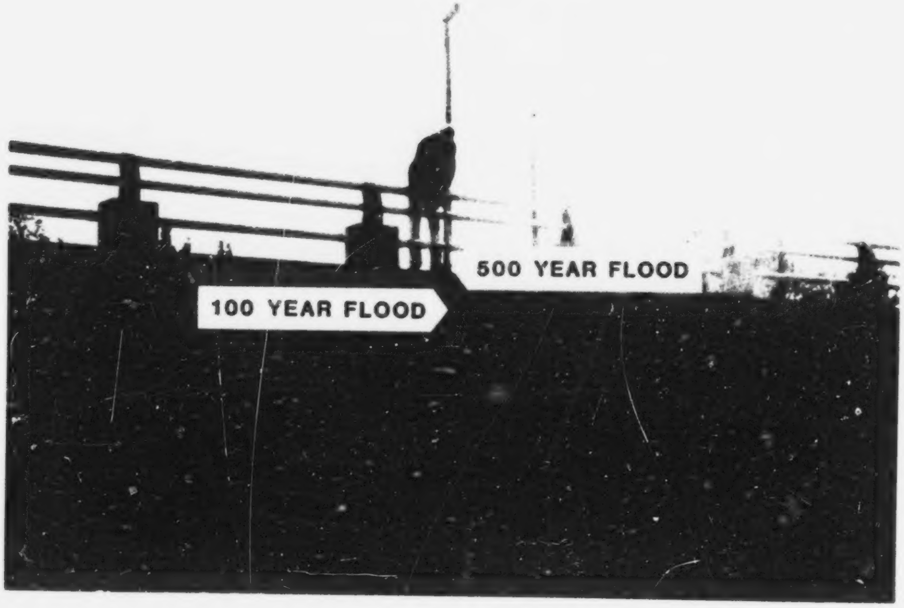

500 YEAR FLOOD
100 YEAR FLOOD

Figure 9 - Potential 100- and 500-year flood heights on the Northwest Branch Anacostia River at University Boulevard, looking downstream.

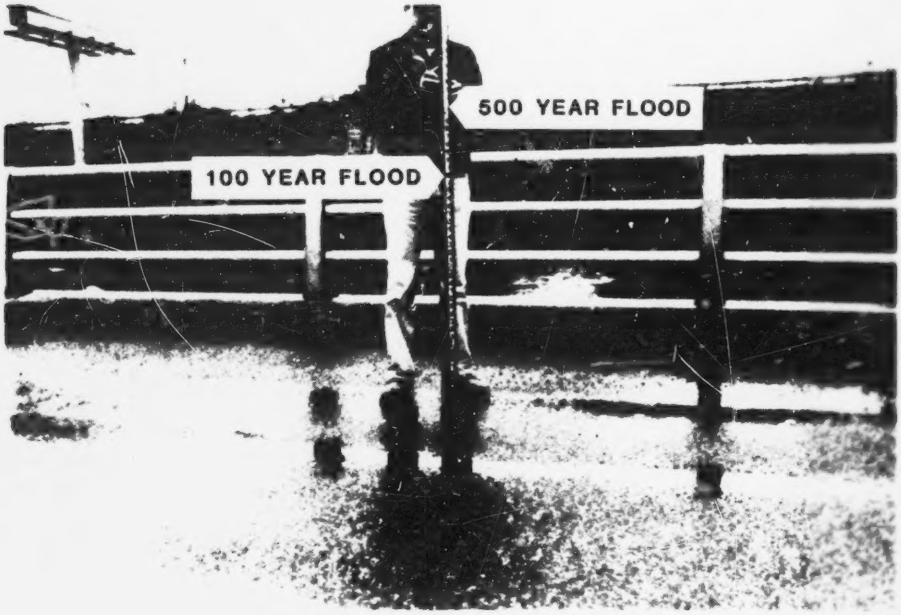

500 YEAR FLOOD
100 YEAR FLOOD

Figure 10 - Potential 100- and 500-year flood heights on Beaverdam Creek at Old Landover Road, looking downstream (southwest).

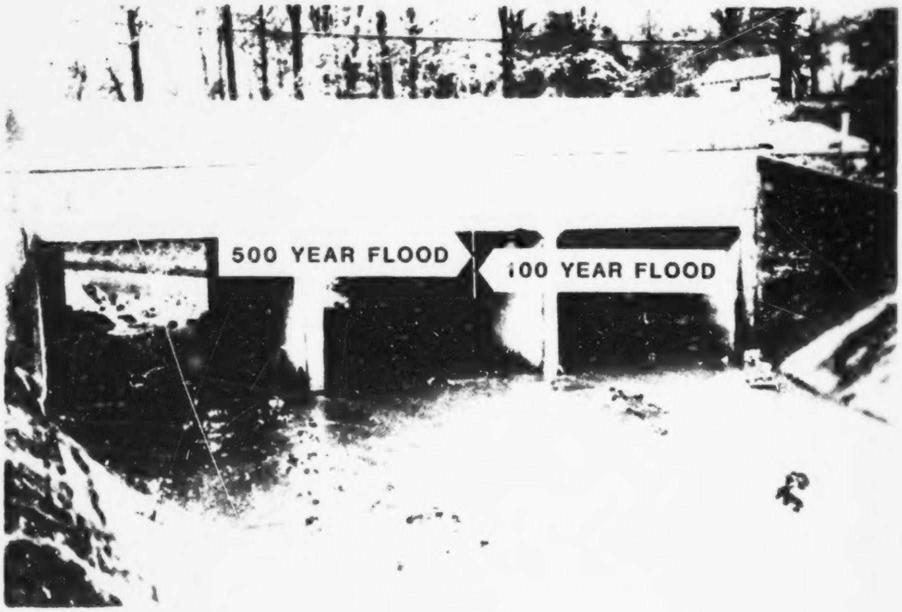

500 YEAR FLOOD
100 YEAR FLOOD

Figure 11 - Potential 100- and 500-year flood heights on Cabin Branch at Seat Pleasant Drive, looking upstream (south).

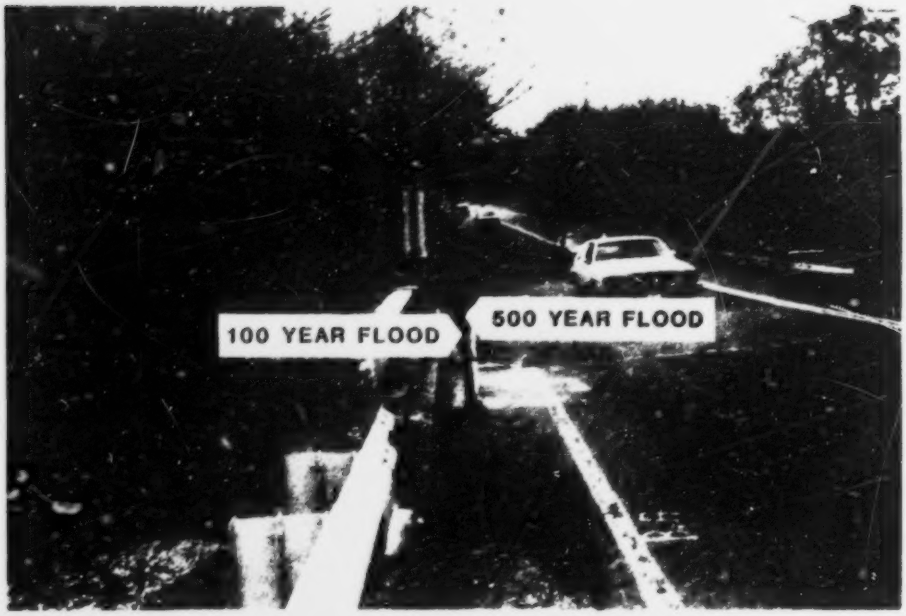

100 YEAR FLOOD
500 YEAR FLOOD

Figure 12 - Potential 100- and 500-year flood heights on Oxon Run at Branch Avenue, looking northwest on the downstream side.

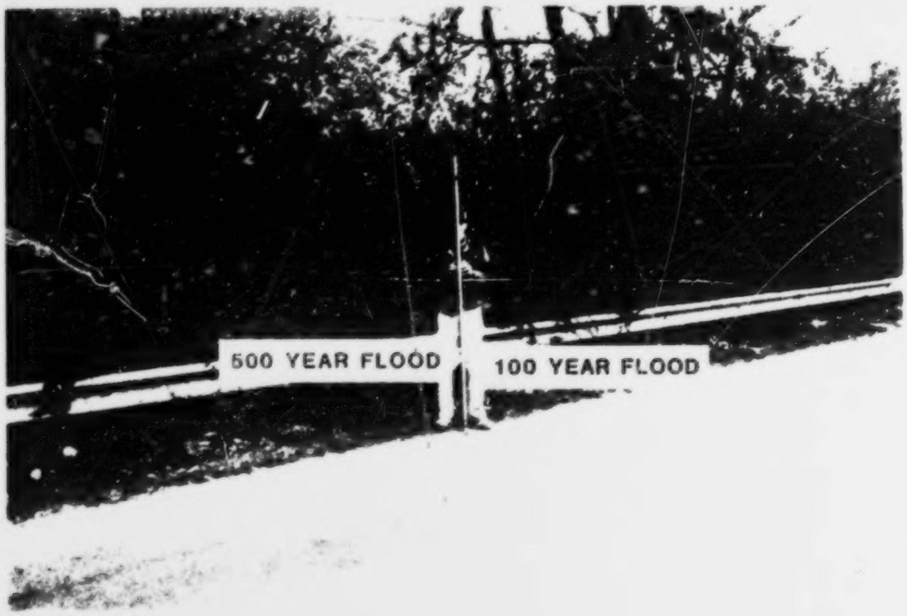

500 YEAR FLOOD
100 YEAR FLOOD

Figure 13 - Potential 100- and 500-year flood heights on Henson Creek at Forestville Road, looking upstream (southwest).

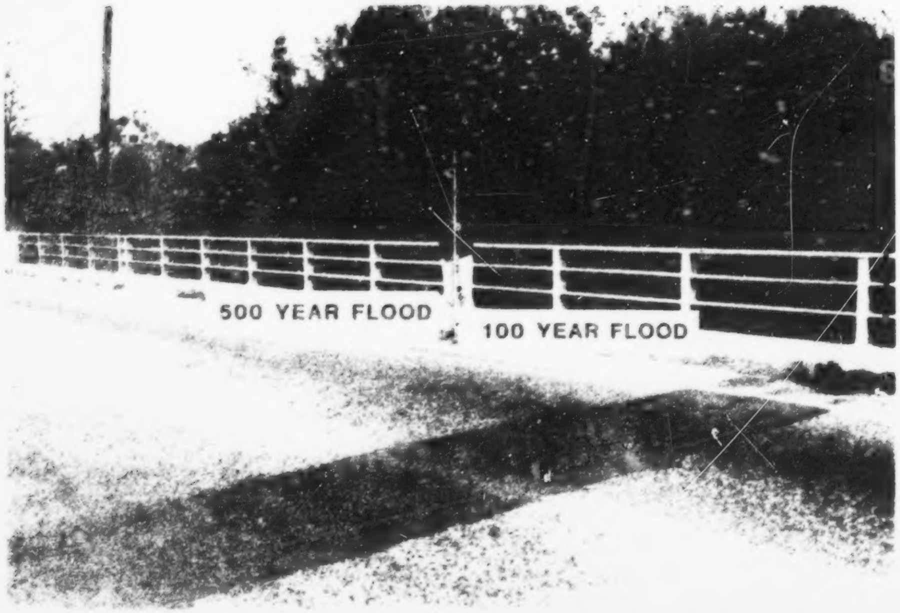
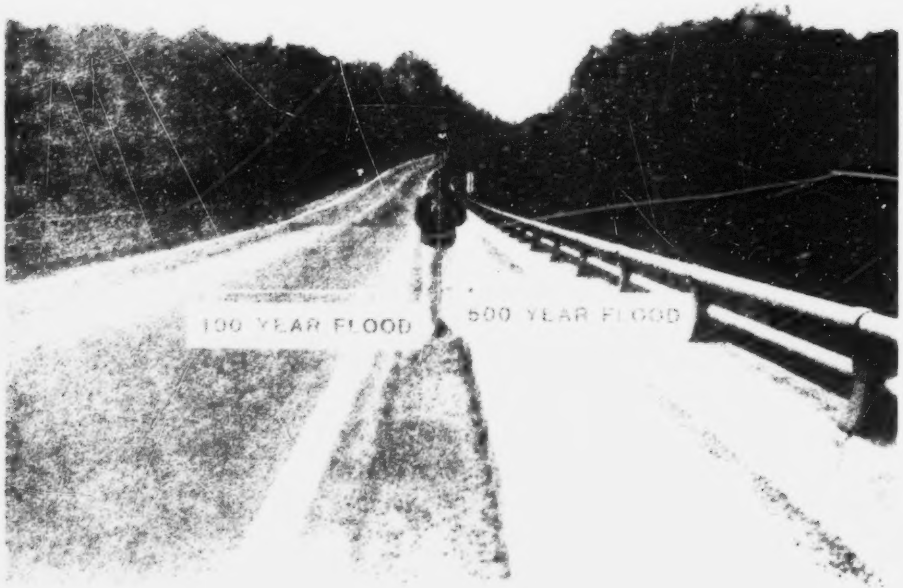

500 YEAR FLOOD
100 YEAR FLOOD

Figure 8.--Potential 100- and 500-year flood heights on Henson Creek at Bock Road, looking upstream (north).


100 YEAR FLOOD
500 YEAR FLOOD

[illegible] Broad Creek at [illegible]

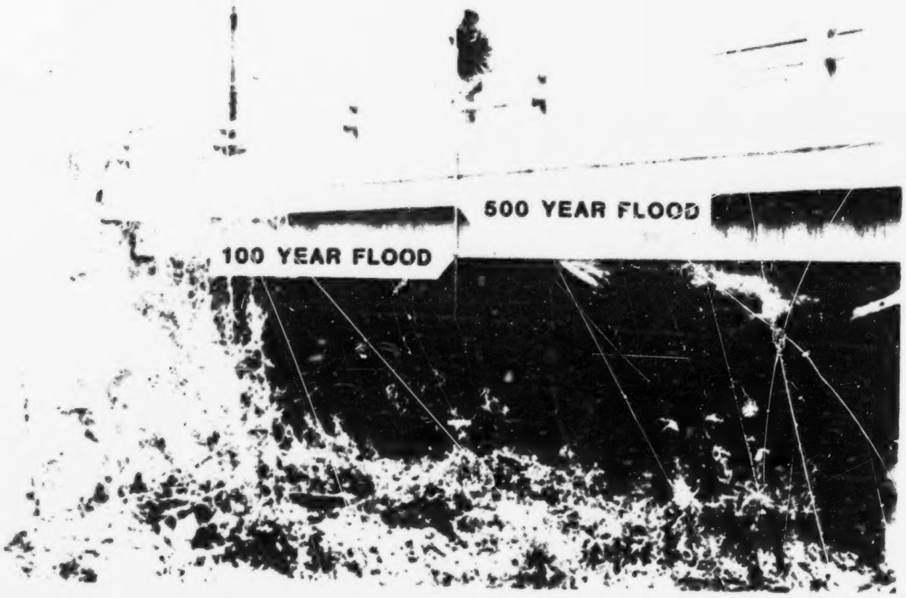

500 YEAR FLOOD
100 YEAR FLOOD

Figure 16 - Potential 100- and 500-year flood heights on Hunters Mill Branch at Livingston Road, looking upstream.

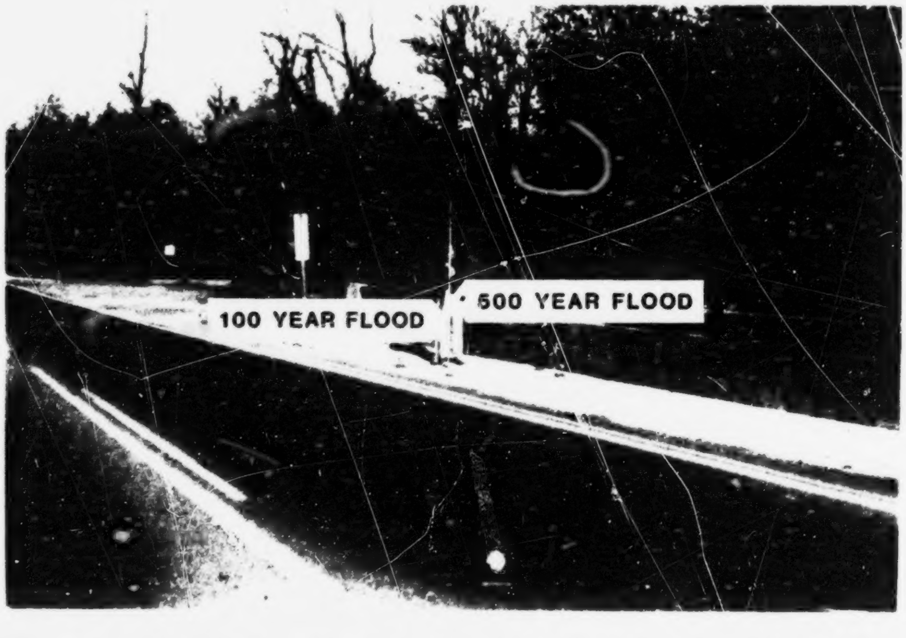

500 YEAR FLOOD
100 YEAR FLOOD

Figure 17 - Potential 100- and 500-year flood heights on Tinkers Creek at Temple Hill Road, looking upstream (north).

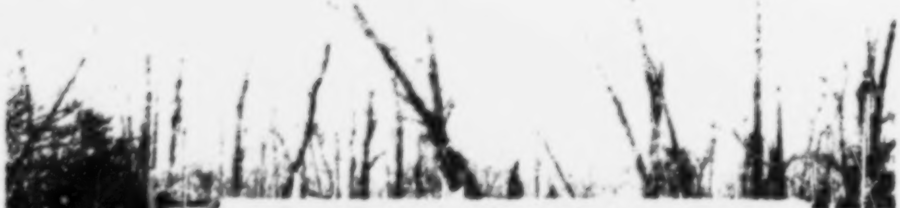

500 YEAR FLOOD
100 YEAR FLOOD

Figure 18 - Potential 100- and 500-year flood heights on Tinkers Creek at Gallahan Road, looking downstream (south).

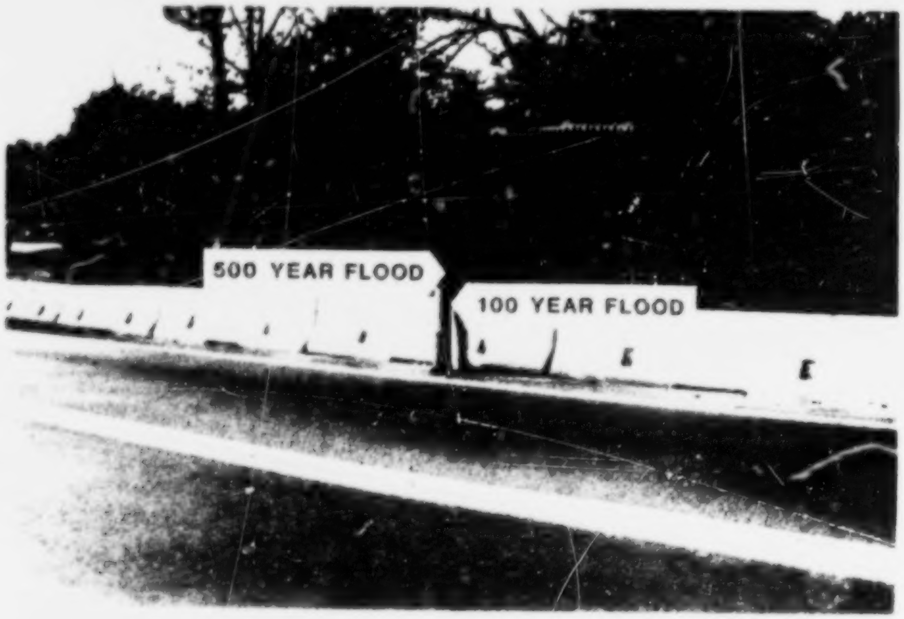

500 YEAR FLOOD
100 YEAR FLOOD

Figure 19 - Potential 100- and 500-year flood heights on Piscataway Creek at Woodyard Road, looking upstream (north).

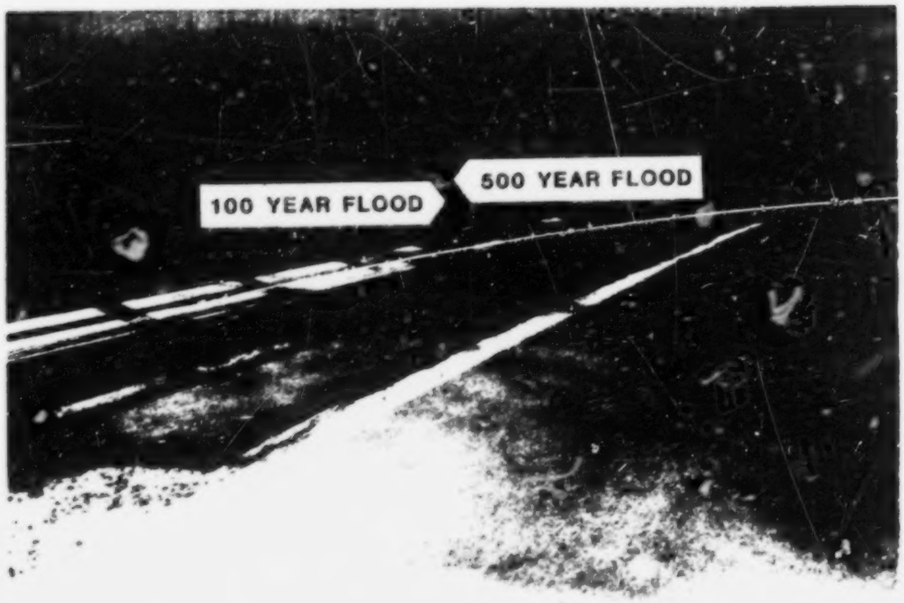

100 YEAR FLOOD
500 YEAR FLOOD

Figure 20 - Potential 100- and 500-year flood heights on Piscataway Creek at Brandywine Road, looking south on the upstream side.

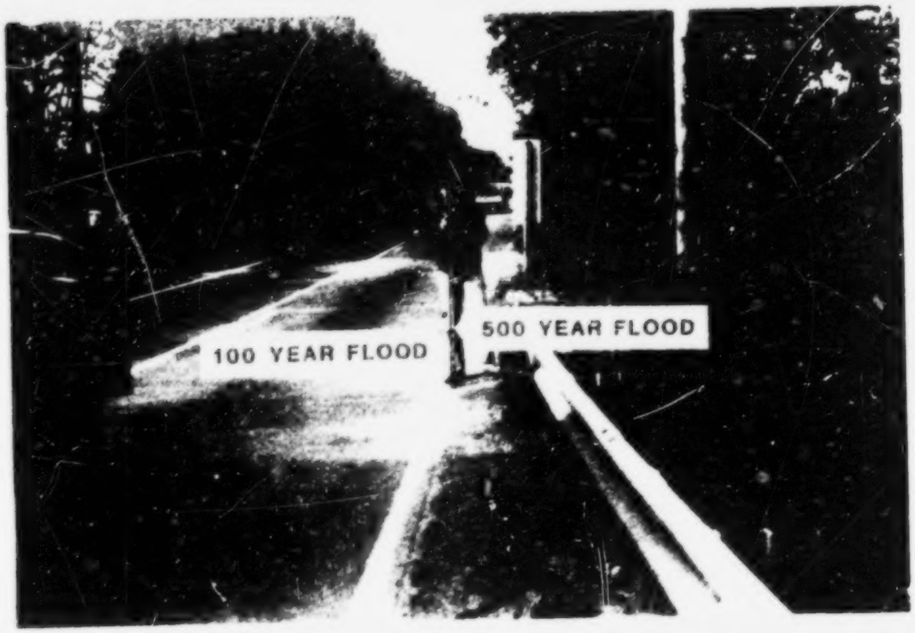

100 YEAR FLOOD
500 YEAR FLOOD

Figure 21 - Potential 100- and 500-year flood heights on Timothy Branch at Brandywine Road, looking west on the upstream side.

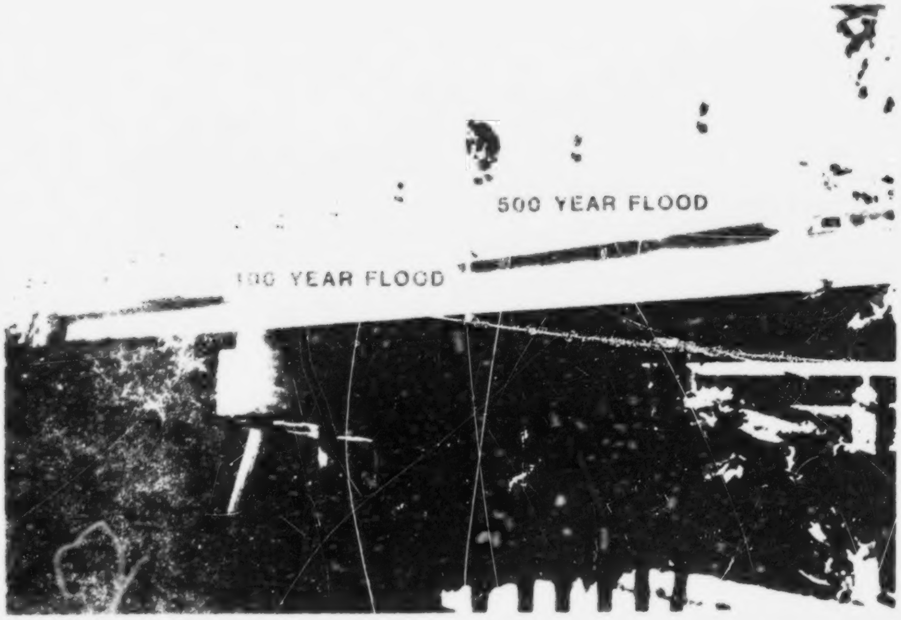

500 YEAR FLOOD
100 YEAR FLOOD

Figure [illegible] 100- and 500-year flood heights on Western Branch at [illegible], Route 301, looking downstream.

500 YEAR FLOOD
100 YEAR FLOOD

Figure [illegible] and 500-year flood heights on Charles Branch at [illegible] upstream side.

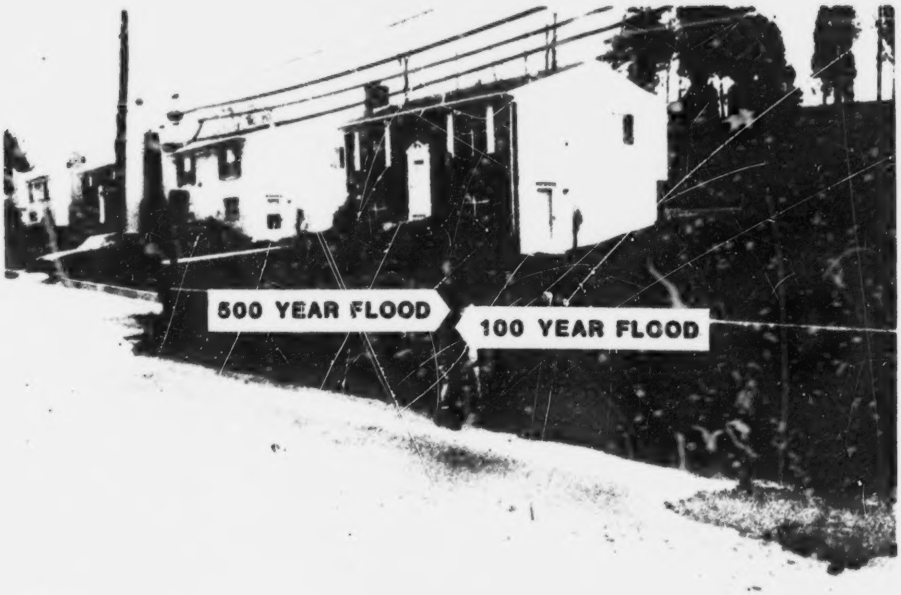

500 YEAR FLOOD
100 YEAR FLOOD

Figure 24 - Potential 100- and 500-year flood heights on Federal Spring Branch at Old Marlboro Pike, looking south from the downstream side.

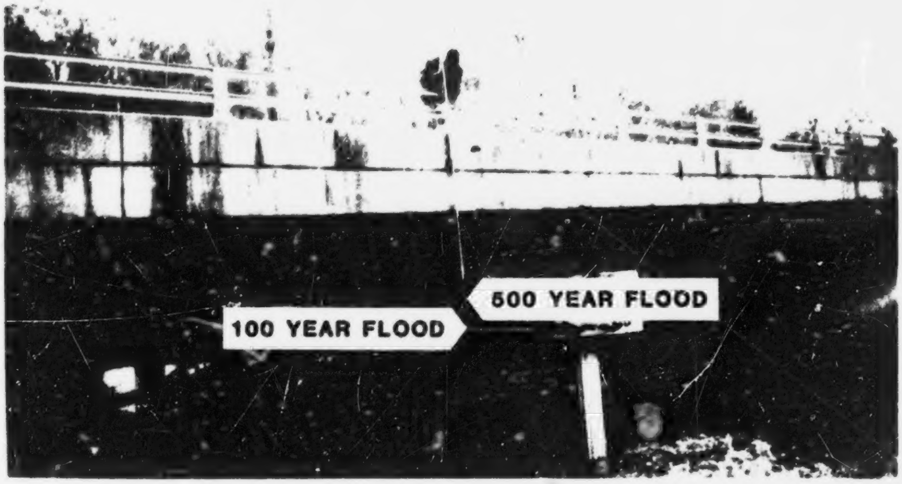

500 YEAR FLOOD
100 YEAR FLOOD

Figure 25 - Potential 100- and 500-year flood heights on Southwest Branch at Walker Mill Road, looking west from the downstream side.

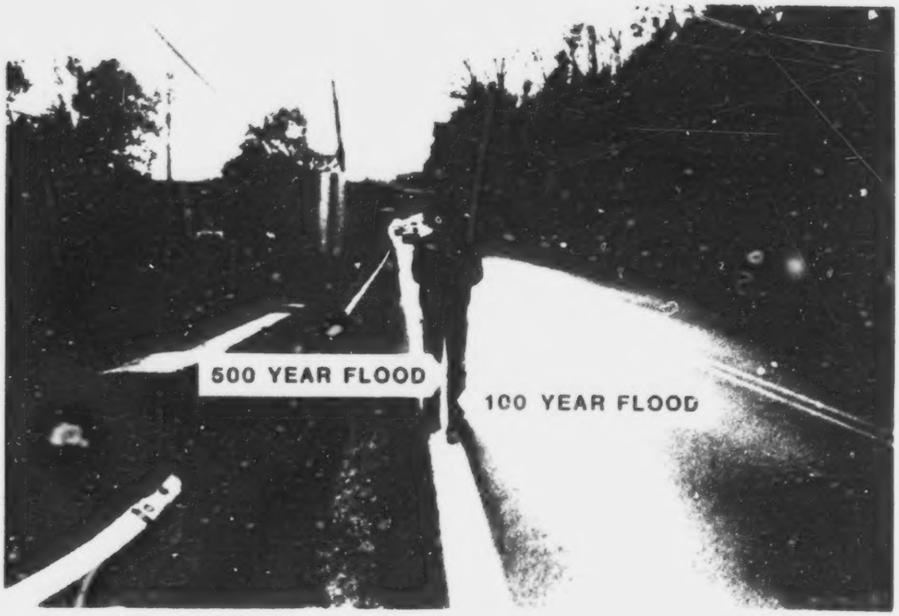

500 YEAR FLOOD
100 YEAR FLOOD

Figure 25 - Potential 100- and 500-year flood heights on Ritchie Branch at Ritchie Road, looking west on the upstream side.

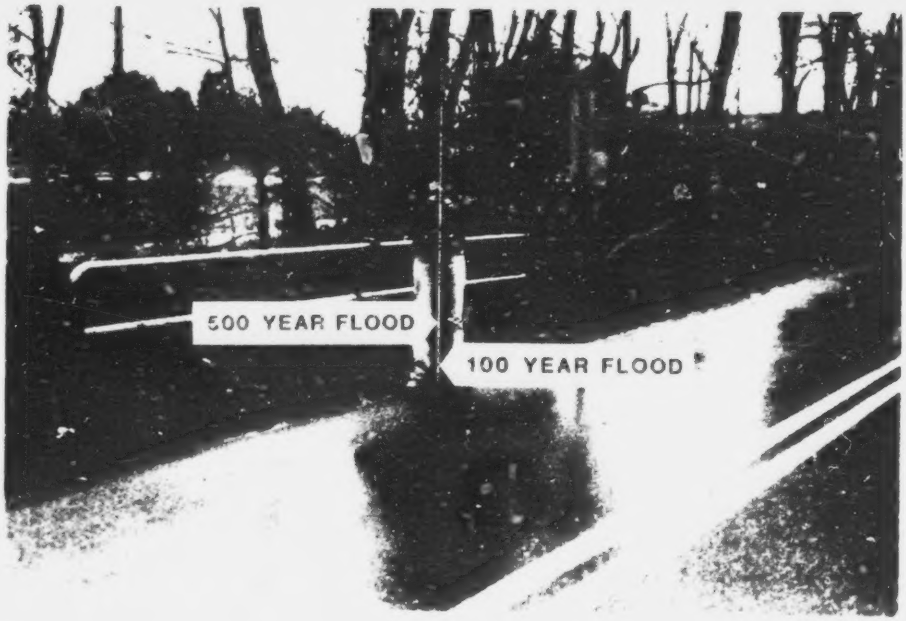

500 YEAR FLOOD
100 YEAR FLOOD

Figure 27 - Potential 100- and 500-year flood heights on Northeast Branch Western Branch at [illegible] Road, looking northeast.

## 2.4 Flood Protection Measures

There are a number of flood protection measures in place in Prince George's County. These projects are included in the modeling. The following is a list of some of the major projects:

a.) extensive levees and channel improvements on Western Branch in the Upper Marlboro area;
b.) channel and culvert improvements along Indian Creek between Powder Mill Road and Baltimore Avenue;
c.) detention ponds on the upper portions of Indian Creek and Ammendale Branch;
d.) levees on the Anacostia River, the Northeast Branch Anacostia River, and the Northwest Branch Anacostia River; and
e.) channel improvements along Paint Branch.

FEMA specifies that all levees have a minimum of 3-foot freeboard to be considered a safe flood protection measure against the 100-year flood. The levees in Prince George's County meet the FEMA requirement.

The flood protection measure of greatest impact is the Patuxent River Acquisition Program established under the provisions of the master plan for the Patuxent River watershed park, which is maintained by the Maryland-National Capital Park and Planning Commission (Reference 9). This plan provided for flood prevention by floodplain land acquisition, with land-use being limited to non-development activities. As of 1977, approximately 5,000 acres of floodplain had been purchased under this program. In 1961, four floodplain management provisions were included in the Patuxent River Watershed Act. These included the prevention of floodplain encroachment due to urban development, the protection of areas subject to erosion and sediment damage, the promotion of conservation, and the beginning of flood prevention programs. Floodplain development has also been limited by Prince George's County floodplain ordinances.

Rocky Gorge and Triadelphia Reservoirs are primarily water-supply reservoirs. They provide regulation of the discharges of lower frequency floods on the Patuxent River. The regulation effect on large floods was found to be minimal.

# 3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the county, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equaled or exceeded once on the average during any

10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1 percent chance of annual exceedence) in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

## 3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge- frequency and peak elevation-frequency relationships for each flooding source studied in detail affecting the county.

Discharges for the following streams were determined using the Technical Release No. 20 (TR-20) computer program: Piscataway Creek; Broad Creek; Henson Creek; Hunters Mill Branch; Unnamed Tributary to Broad Creek; Mattawoman Creek; Timothy Branch; Oxon Run; Western Branch; Collington Branch; Charles Branch; Southwest Branch; Lottsford Branch; Northeast Branch-Western Branch; Folly Branch; Bald Hill Branch; Federal Spring Branch; Ritchie Branch; Horsepen Branch; the Anacostia River; the Northeast Branch Anacostia River; the Northwest Branch Anacostia River; Beaverdam Creek, upstream from approximately 3,900 feet downstream of U. S. Route 50; and Barnaby Run (Reference 10). The TR-20 program computes surface runoff resulting from a synthetic or natural rainstorm, routes the flow through stream channels and reservoirs, and combines the routed hydrograph with those from other tributaries to determine peak discharges. This program takes into account conditions that have a bearing on runoff and can use either an input hydrograph or a synthetic hydrograph on any tributary.

Discharges for the following streams were determined from drainage area-discharge curves developed by the study contractor: Paint Branch; Indian Creek; Beaverdam Creek, from the county boundary to approximately 3,900 feet downstream of U. S. Route 50; Little Paint Branch; Sligo Creek; Brier Ditch; Long Branch; Cabin Branch; Ammendale Branch; Muirkirk Branch; Burch Branch; and Bear Branch. These discharge curves were developed for the various recurrence intervals by analyzing gage records of streams in and around Prince George's County by the U. S. Geological Survey (USGS) J407 computer program (Reference 11). This program followed the log-Pearson Type III flood-frequency analysis as outlined by the Water Resources Council (Reference 12). The adjusted values for each station for the 10-, 50-, 100-, and 500-year discharges were plotted, and representative curves were then selected for each frequency. Discharges were determined using this method for the following streams:

Discharges for Tinkers Creek and Meetinghouse Branch were obtained from the document entitled, Technical Data Base Report, Fiscal Year 1980 (Reference 13).

Discharges for Pea Hill Branch were obtained from a Stormwater Management Planning Study for Tinkers Creek prepared by the Washington Suburban Sanitary Commission (Reference 14). That study utilized the TR-20 computer program (Reference 10).

For the Patuxent River, flood-flow frequency data were based on a statistical analysis of stage-discharge records covering a 26-year period at gaging stations operated by the USGS (Reference 15). This analysis followed the standard log-Pearson Type III method as outlined by the Water Resources Council (Reference 16). Consideration was given to the regulatory effect of Rocky Gorge Reservoir and Triadelphia Reservoir in the discharge determinations.

The 10- and 50-year discharges for Crows Branch were computed using the Rational Method, assuming ultimate development of the watershed. The 100- and 500-year discharges were determined by straight-line extrapolation of a single-log graph of discharges computed for frequencies up to 50 years.

A summary of drainage area-peak discharge relationships for the streams studied by detailed methods is shown in Table 2, "Summary of Discharges."

TABLE 2 - SUMMARY OF DISCHARGES

| FLOODING SOURCE AND LOCATION | DRAINAGE AREA (sq. miles) | PEAK DISCHARGES (cfs) | | | |
|---|---|---|---|---|---|
| | | 10-YEAR | 50-YEAR | 100-YEAR | 500-YEAR |
| PISCATAWAY CREEK | | | | | |
| Approximately 1,500 feet downstream of Indian Head Highway | 62.76 | 7,208 | 12,800 | 15,534 | 23,231 |
| Approximately 450 feet downstream of Piscataway Road | 38.80 | 4,512 | 7,300 | 8,702 | 13,080 |
| Downstream of Brandywine Road | 23.09 | 4,008 | 6,400 | 7,606 | 11,360 |
| Approximately 12,000 feet downstream of Woodyard Road | 8.67 | 3,950 | 6,000 | 6,880 | 9,339 |

## TABLE 2 - SUMMARY OF DISCHARGES - continued

| FLOODING SOURCE AND LOCATION | DRAINAGE AREA (sq. miles) | PEAK DISCHARGES (cfs) 10-YEAR | 50-YEAR | 100-YEAR | 500-YEAR |
|---|---|---|---|---|---|
| TINKERS CREEK | | | | | |
| Approximately 3,350 feet downstream of Gallahan Road | 17.18 | 3,674 | 5,987 | 7,391 | 10,770 |
| Upstream of the confluence of Pea Hill Branch | 7.14 | 2,213 | 3,420 | 4,098 | 5,856 |
| PEA HILL BRANCH | | | | | |
| Approximately 500 feet upstream of its confluence with Tinkers Creek | 3.77 | 1,780 | * | 3,140 | * |
| BURCH BRANCH | | | | | |
| Approximately 1,000 feet upstream of its confluence with Piscataway Creek | 3.78 | 1,450 | 2,250 | 2,800 | 4,700 |
| MEETINGHOUSE BRANCH | | | | | |
| Approximately 500 feet upstream of its confluence with Tinkers Creek | 1.68 | 1,350 | 1,866 | 2,221 | 3,066 |
| BROAD CREEK | | | | | |
| Approximately 3,600 feet downstream of Oxon Hill Road | 24.39 | 5,100 | 7,020 | 8,012 | 10,430 |
| HENSON CREEK | | | | | |
| Approximately 1,000 feet upstream of the confluence of Hunters Mill Branch | 21.19 | 4,864 | 6,750 | 7,684 | 9,670 |
| Approximately 5,400 feet upstream of Bock Road | 14.55 | 4,387 | 6,050 | 6,874 | 8,526 |
| Approximately 1,100 feet upstream of Brinkley Road | 12.51 | 3,559 | 4,800 | 5,387 | 6,728 |
| Approximately 5,350 feet upstream of State Route 5 | 5.10 | 2,023 | 3,150 | 3,704 | 4,985 |
| Upstream side of the Suitland Road bridge | 3.59 | 1,655 | 2,500 | 2,949 | 3,879 |

*Not computed

## TABLE 2 - SUMMARY OF DISCHARGES - continued

| FLOODING SOURCE AND LOCATION | DRAINAGE AREA (sq. miles) | PEAK DISCHARGES (cfs) | | | |
|---|---|---|---|---|---|
| | | 10-YEAR | 50-YEAR | 100-YEAR | 500-YEAR |
| HUNTERS MILL BRANCH | | | | | |
| Approximately 300 feet upstream of Livingston Road | 2.43 | 1,450 | 1,950 | 2,600 | 3,600 |
| UNNAMED TRIBUTARY TO BROAD CREEK | | | | | |
| Approximately 1,040 feet downstream of Fort Washington Road | 2.62 | 1,300 | 1,900 | 2,300 | 3,100 |
| MATTAWOMAN CREEK | | | | | |
| Approximately 10,025 feet downstream of Bealle Hill Road | 35.01 | 3,761 | 6,698 | 8,140 | 12,169 |
| Approximately 100 feet downstream of Sharperville Road | 27.05 | 3,152 | 5,843 | 7,236 | 11,046 |
| Approximately 4,835 feet downstream of Acton Lane | 17.98 | 2,846 | 5,269 | 6,508 | 9,832 |
| Approximately 1,800 feet downstream of U. S. Route 301 | 8.78 | 1,615 | 3,491 | 5,080 | 7,880 |
| TIMOTHY BRANCH | | | | | |
| Approximately 120 feet downstream of the McKendree Road bridge | 4.82 | 1,300 | 2,300 | 2,770 | 4,010 |
| Approximately 2,000 feet downstream of the Brandywine Road bridge | 1.83 | 630 | 1,160 | 1,440 | 2,885 |
| Approximately 1,000 feet upstream of the Brandywine Road bridge | 0.82 | 390 | 690 | 880 | 1,270 |
| OXON RUN | | | | | |
| At the downstream county boundary | 14.01 | 5,200 | 6,900 | 8,300 | 9,900 |
| Approximately 400 feet downstream of 23rd Street | 6.03 | 3,700 | 5,000 | 5,800 | 7,400 |
| Downstream of Suitland Road | 2.79 | 2,500 | 3,350 | 3,800 | 4,800 |

## TABLE 2 - SUMMARY OF DISCHARGES - continued

| FLOODING SOURCE AND LOCATION | DRAINAGE AREA (sq. miles) | PEAK DISCHARGES (cfs) | | | |
|---|---|---|---|---|---|
| | | 10-YEAR | 50-YEAR | 100-YEAR | 500-YEAR |
| PATUXENT RIVER | | | | | |
| At State Route 4 | 400 | 24,500 | 43,000 | 52,500 | 77,000 |
| WESTERN BRANCH | | | | | |
| Approximately 50 feet downstream of U. S. Route 301 | 89.70 | 8,815 | 13,700 | 16,818 | 24,423 |
| Approximately 150 feet upstream of the Main Street bridge | 66.13 | 7,210 | 11,000 | 13,563 | 19,276 |
| Downstream side of the State Route 202 bridge | 30.17 | 3,799 | 5,900 | 7,435 | 10,673 |
| Approximately 150 feet upstream of Mill Road | 18.64 | 1,975 | 3,100 | 3,753 | 5,244 |
| COLLINGTON BRANCH | | | | | |
| Downstream side of the State Route 202 bridge | 22.12 | 1,988 | 3,150 | 4,009 | 5,879 |
| Approximately 100 feet upstream of the Oak Grove Road bridge | 11.34 | 1,234 | 1,850 | 2,393 | 3,550 |
| Downstream side of the Mount Oak Road bridge | 6.09 | 819 | 1,350 | 1,737 | 2,563 |
| CHARLES BRANCH | | | | | |
| Approximately 3,200 feet upstream of its confluence with Western Branch | 17.81 | 2,000 | 3,150 | 3,900 | 5,600 |
| Approximately 2,050 feet upstream of the Croom Station Road bridge | 8.71 | 1,150 | 1,800 | 2,250 | 3,200 |
| Approximately 6,100 feet upstream of the U. S. Route 301 bridge | 3.65 | 600 | 970 | 1,150 | 1,550 |
| SOUTHWEST BRANCH | | | | | |
| Approximately 300 feet downstream of White House Road bridge | 15.83 | 4,235 | 5,900 | 6,929 | 9,716 |
| Approximately 200 feet upstream of Interstate 395 | 8.45 | 3,057 | 4,100 | 4,781 | 6,854 |
| Approximately 1,100 feet upstream of the Walker Mill Road bridge | 2.80 | 2,132 | 3,000 | 3,622 | 4,806 |

## TABLE 2 - SUMMARY OF DISCHARGES - continued

| FLOODING SOURCE AND LOCATION | DRAINAGE AREA (sq. miles) | PEAK DISCHARGES (cfs) | | | |
|---|---|---|---|---|---|
| | | 10-YEAR | 50-YEAR | 100-YEAR | 500-YEAR |
| LOTTSFORD BRANCH | | | | | |
| Approximately 220 feet downstream of the Lottsford Vista Road bridge | 9.32 | 854 | 1,400 | 1,791 | 2,734 |
| Approximately 1,060 feet upstream of the confluence of Folly Branch | 2.80 | 585 | 890 | 1,095 | 1,552 |
| NORTHEAST BRANCH-WESTERN BRANCH | | | | | |
| Approximately 1,770 feet downstream of State Route 214 | 8.65 | 2,249 | 3,500 | 4,333 | 6,178 |
| Approximately 1,100 feet upstream of Enterprise Road | 3.85 | 980 | 1,550 | 1,904 | 2,723 |
| FOLLY BRANCH | | | | | |
| Approximately 2,700 feet downstream of U. S. Route 50 | 6.28 | 659 | 1,100 | 1,343 | 1,945 |
| Approximately 4,150 feet upstream of the Baltimore Lane bridge | 3.12 | 441 | 670 | 842 | 1,184 |
| BALD HILL BRANCH | | | | | |
| Approximately 1,360 feet downstream of Ardwick-Ardmore Road | 5.83 | 1,039 | 1,450 | 1,734 | 2,198 |
| Downstream side of State Route 450 bridge | 1.89 | 819 | 1,100 | 1,306 | 1,630 |
| FEDERAL SPRING BRANCH | | | | | |
| Approximately 4,900 feet downstream of State Route 408 | 4.05 | 1,048 | 1,550 | 1,864 | 2,368 |
| RITCHIE BRANCH | | | | | |
| Approximately 2,050 feet downstream of the Ritchie Road bridge | 2.21 | 705 | 1,050 | 1,246 | 1,734 |

## TABLE 2 - SUMMARY OF DISCHARGES - continued

| FLOODING SOURCE AND LOCATION | DRAINAGE AREA (sq. miles) | PEAK DISCHARGES (cfs) | | | |
|---|---|---|---|---|---|
| | | 10-YEAR | 50-YEAR | 100-YEAR | 500-YEAR |
| HORSEPEN BRANCH | | | | | |
| Approximately 3,150 feet downstream of Bowie Racetrack Road | 6.19 | 900 | 1,450 | 1,750 | 2,400 |
| Approximately 450 feet downstream of the CONRAIL bridge | 3.04 | 520 | 840 | 1,000 | 1,350 |
| BEAR BRANCH | | | | | |
| At its confluence with Crows Branch | 2.79 | 1,050 | 1,600 | 1,900 | 3,100 |
| Upstream of Contee Road | 1.04 | 720 | 1,050 | 1,200 | 1,800 |
| ANACOSTIA RIVER | | | | | |
| At the downstream county boundary | 131.89 | 23,033 | 29,524 | 33,702 | 41,000 |
| NORTHEAST BRANCH ANACOSTIA RIVER | | | | | |
| Approximately 500 feet downstream of the Bladensburg Road bridge | 75.04 | 14,072 | 18,075 | 20,728 | 27,000 |
| Approximately 300 feet downstream of the Calvert Road bridge | 60.70 | 12,019 | 15,337 | 17,566 | 22,000 |
| NORTHWEST BRANCH ANACOSTIA RIVER | | | | | |
| Approximately 450 feet downstream of Chessie System bridge | 53.41 | 8,337 | 15,721 | 19,578 | 28,800 |
| Approximately 1,050 feet downstream of the Ager Road bridge | 35.87 | 4,491 | 11,409 | 15,058 | 23,000 |
| Approximately 350 feet upstream of the University Boulevard bridge | 34.00 | 6,617 | 12,384 | 16,255 | 24,500 |
| PAINT BRANCH | | | | | |
| Approximately 350 feet upstream of the confluence of Indian Creek | 31.07 | 4,400 | 8,100 | 11,200 | 22,500 |
| Approximately 550 feet upstream of the confluence of Little Paint Branch | 17.64 | 3,300 | 5,800 | 7,700 | 14,500 |

## TABLE 2 - SUMMARY OF DISCHARGES - continued

| FLOODING SOURCE AND LOCATION | DRAINAGE AREA (sq. miles) | PEAK DISCHARGES (cfs) | | | |
|---|---|---|---|---|---|
| | | 10-YEAR | 50-YEAR | 100-YEAR | 500-YEAR |
| INDIAN CREEK | | | | | |
| Approximately 3,100 feet downstream of Berwyn Street Road | 29.2 | 4,400 | 7,900 | 10,800 | 21,000 |
| Approximately 300 feet downstream of the Interstate 95 bridge | 25.0 | 4,000 | 7,100 | 8,800 | 19,000 |
| Approximately 1,800 feet downstream of Sunnyside Road | 10.4 | 2,500 | 4,200 | 5,742 | 10,000 |
| Upstream of the confluence of Ammendale Branch | 2.6 | 1,200 | 1,800 | 2,154 | 3,600 |
| Approximately 1,800 feet downstream of the Ammendale Road bridge | 1.9 | 980 | 1,450 | 1,497 | 2,750 |
| BEAVERDAM CREEK | | | | | |
| Approximately 1,860 feet downstream of the Interstate 295 bridge | 14.85 | 3,000 | 5,200 | 6,900 | 13,000 |
| Approximately 320 feet downstream of the Beaver Road bridge | 7.97 | 2,150 | 3,550 | 4,600 | 8,200 |
| Approximately 240 feet upstream of the Old Landover Road bridge | 3.36 | 1,350 | 2,100 | 2,550 | 4,300 |
| Approximately 3,900 feet downstream of U. S. Route 50 | 2.12 | 723 | 841 | 921 | 1,090 |
| LITTLE PAINT BRANCH | | | | | |
| Approximately 600 feet downstream of the Cherry Hill Road bridge | 10.39 | 2,500 | 4,200 | 5,500 | 10,000 |
| Approximately 250 feet downstream of the Interstate 95 bridge | 7.78 | 2,150 | 3,500 | 4,500 | 8,100 |
| Approximately 3,300 feet downstream of the Green Castle Road bridge | 4.17 | 1,500 | 2,400 | 3,000 | 5,100 |
| SLIGO CREEK | | | | | |
| Approximately 800 feet upstream of its confluence with the Northwest Branch Anacostia River | 11.35 | 2,600 | 4,400 | 5,800 | 10,500 |

## TABLE 2 - SUMMARY OF DISCHARGES -- continued

| FLOODING SOURCE AND LOCATION | DRAINAGE AREA (sq. miles) | PEAK DISCHARGES (cfs) | | | |
|---|---|---|---|---|---|
| | | 10-YEAR | 50-YEAR | 100-YEAR | 500-YEAR |
| SLIGO CREEK (continued) | | | | | |
| Approximately 175 feet upstream of the confluence of Long Branch | 6.86 | 2,000 | 3,200 | 4,200 | 7,300 |
| BRIER DITCH | | | | | |
| Approximately 300 feet downstream of the Kensington Avenue bridge | 7.52 | 2,100 | 3,400 | 4,400 | 7,800 |
| Approximately 60 feet downstream of the Kensington Avenue bridge | 3.81 | 1,450 | 2,250 | 2,800 | 4,800 |
| LONG BRANCH | | | | | |
| Approximately 450 feet upstream of its confluence with Sligo Creek | 1.76 | 950 | 1,400 | 1,650 | 2,650 |
| CABIN BRANCH | | | | | |
| Approximately 2,400 feet downstream of the Sheriff Road bridge | 3.43 | 1,350 | 2,100 | 2,600 | 4,400 |
| Downstream side of the Seat Pleasant Drive-F Street bridge | 2.25 | 1,100 | 1,650 | 1,950 | 3,200 |
| AMMENDALE BRANCH | | | | | |
| Approximately 550 feet downstream of U. S. Route 1 | 2.2 | 1,100 | 1,650 | 1,950 | 3,200 |
| MUIRKIRK BRANCH | | | | | |
| At its confluence with Indian Creek | 1.76 | 2,000 | 3,300 | 4,470 | 7,600 |
| BARNABY RUN | | | | | |
| At its confluence with Oxon Run | 3.9 | 2,808 | 3,779 | 4,384 | 5,598 |
| CROWS BRANCH | | | | | |
| Below the confluence of Bear Branch | 3.3 | 3,160 | 4,170 | 4,980 | 6,880 |
| Above the confluence of Bear Branch | 1.46 | 1,650 | 2,140 | 2,410 | 3,130 |

For streams studied by approximate methods, the discharges determined for the streams studied by detailed methods were used (either taken from the TR-20 program or from the drainage area/discharge curves).

Tidal frequency data for the Patuxent River at the confluence of Western Branch were based on a survey and analysis of hurricane data (Reference 17). Tidal frequency data for the Patuxent River at its confluence with the Chesapeake Bay were based on relationships developed by the Virginia Institute of Marine Science (VIMS) (Reference 18).

Peak elevation-frequency relationships for the Potomac River were established using VIMS elevations at Cornfield Harbor (mouth of the Potomac River) and National Oceanic and Atmospheric Administration gage records at Washington, D. C. (References 18 and 19). Data for the Potomac River at Chopawamsic Creek, Aquia Creek, Potomac Creek, Occoquan Bay, and Powells Creek were obtained from the Flood Insurance Studies for Stafford and Prince William Counties (References 20 and 21). Gage data at Washington, D. C., and elevations determined by VIMS at Cornfield Harbor were input into a COE formula to establish elevations at Dahlgren (Reference 22). The formula is:

> Surge at the mouth of the Potomac River = surge at Dahlgren - one half (surge at Washington, D. C. - surge at Dahlgren).

Using these data, peak elevation curves were prepared for the 10-, 50-, 100-, and 500-year events from Washington, D. C., to the Chesapeake Bay.

A summary of peak elevation-frequency relationships for the Chesapeake Bay affecting the Patuxent River is shown in Table 3, "Summary of Stillwater Elevations." The Potomac River is not included in this table since tidal elevations are shown on a profile.

TABLE 3 - SUMMARY OF STILLWATER ELEVATIONS

| FLOODING SOURCE AND LOCATION | ELEVATION (feet)<br>10-YEAR | 50-YEAR | 100-YEAR | 500-YEAR |
|---|---|---|---|---|
| CHESAPEAKE BAY | | | | |
| On the Patuxent River at the confluence of Western Branch | 4.3 | 7.0 | 8.2 | 10.2 |
| On the Patuxent River at the downstream side of U. S. Route 231 | 3.7 | 5.8 | 7.0 | 8.4 |
| On the Patuxent River at its confluence with the Chesapeake Bay (Solomons Island) | 3.4 | 4.8 | 5.5 | 7.0 |

## 3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

The hydraulic analysis for Pea Hill Branch was obtained from a Stormwater Management Planning Study for Tinkers Creek prepared by the Washington Suburban Sanitary Commission (Reference 14). Cross sections, waterway opening dimensions, and roadway elevations of structures and culverts for Pea Hill Branch were obtained by field surveys.

Cross sections were located along the detailed study streams at intervals ranging from approximately 20 to 2,000 feet, depending on stream alignment, roadway structures, and overbank topography. Topographic maps at a scale of 1"=200' with contour intervals of 2 and 5 feet covering the entire county were prepared (References 23 and 24). Where significant changes have occurred, this existing mapping was supplemented with new maps at a scale of 1"=200' with contour intervals of 2 and 5 feet (Reference 25). Channel invert, top, and bottom bank elevations were obtained by field surveys. The remaining cross-section elevations were obtained using the topographic maps. The waterway opening dimensions and roadway elevations of structures and culverts were obtained by field surveys. The drainage area to each cross section was determined from USGS topographic maps or from a topographic map of Prince George's County (References 26 and 27).

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross section locations are also shown on the Flood Boundary and Floodway Map (Exhibit 2). Along certain portions of Collington Branch and Folly Branch, profile base lines are shown on the maps to represent channel distances as indicated on the flood profiles.

Water-surface elevations of floods of the selected recurrence intervals were computed using the COE HEC-2 step-backwater computer program (Reference 28). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

Starting water-surface elevations for Piscataway Creek, Broad Creek, Unnamed Tributary to Broad Creek, and the lower portion of Oxon Run were taken from the Potomac River tidal profile developed for the Flood Insurance Study for Charles County (Reference 29). Starting water-surface elevations for the Anacostia River, Beaverdam Creek, the upper portion of Oxon Run, and Barnaby Run were obtained from the Flood Insurance Study for Washington, D. C. (Reference 30).

Starting water-surface elevations for Western Branch and Charles Branch were taken from the effective Flood Insurance Study for Prince George's County assuming coincident peak flows at their respective points of confluence with the Patuxent River (Reference 31). Starting water-surface elevations for Bear Branch and Horsepen Branch were taken from the Flood Insurance Study for Anne Arundel County assuming coincident peak flows at their respective points of confluence with the Patuxent River (Reference 32). Starting water-surface elevations for Mattawoman Creek were obtained from the Flood Insurance Study for Charles County (Reference 29). Starting water-surface elevations for Timothy Branch were taken from the Flood Insurance Study for Charles County assuming coincident peak flows at its confluence with Mattawoman Creek. Starting water-surface elevations for Crows Branch were obtained from the Flood Insurance Study for the City of Laurel (Reference 33).

Starting water-surface elevations for the remaining streams studied by detailed methods were developed using a coincident flow methodology developed by the study contractor. Data from the 20 USGS gaging stations listed in Table 1 were examined and peak discharges ranked for each gage. Six storms were selected based on rank at all gages. Recurrence intervals at each gage for each storm were based on either drainage area-discharge relationships, as described in Section 3.1, or on estimates made by the USGS based on Bulletin 15 (Reference 16).

Drainage area versus recurrence was plotted for each storm at each gage to approximate the boundary of the data points. A generalized line of "average slope" was selected to approximate the data set.

To determine the coincident flood of the main stem to the tributary being analyzed, the recurrence interval is first plotted against the drainage area of the tributary. Then, a line parallel to the average slope line is drawn through the point. This line is followed to the drainage area of the main stream, and the recurrence interval of the main stream is read. An estimate of the water-surface elevation of the main stream at this recurrence interval is used for the tributary as its starting water-surface elevation.

Channel and overbank roughness factors (Manning's "n") used in the hydraulic computations were chosen based on field observations. The channel "n" and overbank "n" values for the streams studied by detailed methods are shown in Table 4. Overbank values listed in the table were determined by field inspection. Modeling of some cross sections involved "n" values not within the listed ranges. Values as high as 10.0 were used for the portion of the cross section where buildings obstructed some or all of the overbank. Values as low as 0.020 were used where the overbank was a road surface (such as between the upstream and downstream sections of a bridge). These extreme values were omitted from the table in order to give a better description of the natural floodplain. Channel "n" values in the table include all the values used in the modeling.

### TABLE 4 - ROUGHNESS COEFFICIENTS

| Stream | Channel "n" | Overbank "n" |
|---|---|---|
| Piscataway Creek | 0.025-0.035 | 0.070-0.110 |
| Tinkers Creek | 0.020-0.030 | 0.050-0.110 |
| Pea Hill Branch | 0.040 | 0.090-0.095 |
| Burch Branch | 0.025-0.030 | 0.030-0.110 |
| Meetinghouse Branch | 0.025-0.035 | 0.040-0.110 |
| Broad Creek | 0.030 | 0.090-0.110 |
| Henson Creek | 0.015-0.042 | 0.030-0.250 |
| Hunters Mill Branch | 0.030-0.040 | 0.065-0.110 |
| Unnamed Tributary to Broad Creek | 0.020-0.035 | 0.060-0.110 |
| Mattawoman Creek | 0.038-0.070 | 0.020-0.115 |
| Timothy Branch | 0.030-0.080 | 0.020-0.170 |
| Oxon Run | 0.020-0.035 | 0.030-0.110 |
| Patuxent River | 0.030-0.045 | 0.045-0.100 |
| Western Branch | 0.030-0.040 | 0.040-0.200 |
| Collington Branch | 0.025-0.050 | 0.030 |
| Charles Branch | 0.030-0.050 | 0.060-0.110 |
| Southwest Branch | 0.015-0.035 | 0.050-0.120 |
| Lottsford Branch | 0.025-0.045 | 0.050-0.110 |
| Northeast Branch-Western Branch | 0.030-0.040 | 0.040-0.100 |
| Folly Branch | 0.030-0.050 | 0.035-0.120 |
| Bald Hill Branch | 0.030-0.050 | 0.030-0.120 |
| Federal Spring Branch | 0.030-0.045 | 0.050-0.110 |
| Ritchie Branch | 0.025-0.045 | 0.080-0.130 |
| Horsepen Branch | 0.020-0.035 | 0.040-0.110 |
| Bear Branch | 0.030-0.047 | 0.025-0.100 |
| Anacostia River | 0.025-0.085 | 0.030-0.100 |
| Northeast Branch Anacostia River | 0.025-0.035 | 0.030-0.080 |
| Northwest Branch Anacostia River | 0.025-0.040 | 0.045-0.300 |
| Paint Branch | 0.030-0.070 | 0.030-0.200 |
| Indian Creek | 0.020-0.035 | 0.040-0.100 |
| Beaverdam Creek | 0.020-0.035 | 0.030-0.110 |
| Little Paint Branch | 0.025-0.040 | 0.035-0.100 |
| Sligo Creek | 0.030-0.050 | 0.035-0.110 |
| Brier Ditch | 0.025-0.045 | 0.045-0.100 |
| Long Branch | 0.030-0.035 | 0.050-0.100 |
| Cabin Branch | 0.025-0.035 | 0.050-0.110 |
| Ammendale Branch | 0.025-0.040 | 0.040-0.130 |
| Muirkirk Branch | 0.035 | 0.070-0.100 |
| Barnaby Run | 0.015-0.050 | 0.035-0.100 |
| Crows Branch | 0.030-0.045 | 0.040-0.100 |

All elevations are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). Elevation reference marks used in this study are shown on the maps.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

For the streams studied by approximate methods, the extent of the 100-year flood was determined using detailed study discharges. Channel slope, cross sections, and "n" values were developed from topographic maps (References 23 and 25). Velocity was calculated by Manning's formula. These data were used to determine the depth at each cross section for the 100-year flood. Approximate boundaries for Lottsford Branch, Northeast Branch-Western Branch, Turkey Branch, Cabin Branch, Back Branch, Federal Spring Branch, Unnamed Tributary No. 7, and Unnamed Tributary No. 8 were adjusted on the basis of a Comprehensive Watershed Management Plan prepared for the Western Branch of the Patuxent River (Reference 34). Approximate boundaries for Piscataway Creek, Burch Branch, Butler Branch, House Branch, Unnamed Tributary No. 4, Unnamed Tributary No. 5, and Unnamed Tributary No. 6 were adjusted on the basis of a Comprehensive Watershed Management Plan prepared for Piscataway Creek (Reference 35). Approximate boundaries for Henson Creek, Carey Branch, an unnamed tributary to Broad Creek, and unnamed tributaries to Henson Creek were adjusted on the basis of a Comprehensive Watershed Management Plan prepared for Henson Creek (Reference 36).

## 4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages State and local governments to adopt sound floodplain management programs. Therefore, each Flood Insurance Study produces maps designed to assist communities in developing floodplain management measures.

### 4.1 Flood Boundaries

To provide a national standard without regional discrimination, the 1 percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2 percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the 100- and 500-year floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps (References 23, 24, and 25).

For the streams studied by approximate methods, the boundary of the 100-year flood was delineated using the topographic maps referenced above, the previous Flood Insurance Study for Prince George's County, and Comprehensive Watershed Management Plans prepared by the Prince George's County Stormwater Management Technical Group (References 23, 25, 31, 34, 35, and 36).

The 100- and 500-year floodplain boundaries are shown on the Flood Boundary and Floodway Map (Exhibit 2). In cases where the 100- and 500-year floodplain boundaries are close together, only the 100-year floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

## 4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood- carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this study were computed on the basis of equal conveyance reduction from each side of the floodplain. The results of these computations are tabulated at selected cross sections for each stream segment for which a floodway is computed (Table 5).

As shown on the Flood Boundary and Floodway Map (Exhibit 2), the floodway boundaries were computed at cross sections. Between cross sections, the boundaries were interpolated. In cases where the floodway and 100-year floodplain boundaries are either close together or collinear, only the floodway boundary has been shown. Portions of the floodway widths for Mattawoman Creek extend beyond the county boundary.

The area between the floodway and 100-year floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed

| FLOODING SOURCE | | FLOODWAY | | | BASE FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH[2] (FEET) | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| | | | | | | (FEET NGVD) | | |
| Mattawoman Creek | | | | | | | | |
| A | 78,505 | 1000/732 | 5,377 | 1.5 | 64.9 | 64.9 | 65.4 | 0.5 |
| B | 80,655 | 1450/635 | 4,608 | 1.7 | 68.4 | 68.4 | 69.0 | 0.6 |
| C | 84,115 | 1200/225 | 5,404 | 1.5 | 74.6 | 74.6 | 75.5 | 0.9 |
| D | 87,990 | 1300/275 | 4,920 | 1.6 | 80.7 | 80.7 | 81.5 | 0.8 |
| E | 90,490 | 900/300 | 4,192 | 1.9 | 85.9 | 85.9 | 86.6 | 0.7 |
| F | 94,640 | 1700/280 | 6,723 | 1.2 | 92.0 | 92.0 | 92.8 | 0.8 |
| G | 97,990 | 1000/300 | 4,575 | 1.8 | 96.4 | 96.4 | 96.9 | 0.5 |
| H | 100,515 | 89/28 | 939 | 8.7 | 99.9 | 99.9 | 100.6 | 0.7 |
| I | 100,565 | 90/1 | 947 | 8.6 | 100.1 | 100.1 | 100.8 | 0.7 |
| J | 104,845 | 1006/386 | 5,060 | 1.6 | 110.4 | 110.4 | 111.4 | 1.0 |
| K | 106,165 | 1400/635 | 6,381 | 1.3 | 111.6 | 111.6 | 112.5 | 0.9 |
| L | 110,685 | 700/70 | 2,015 | 4.0 | 119.7 | 119.7 | 120.1 | 0.4 |
| M | 110,985 | 1300/175 | 5,216 | 1.4 | 120.4 | 120.4 | 121.0 | 0.6 |
| N | 115,095 | 700/360 | 2,182 | 3.3 | 126.8 | 126.8 | 127.2 | 0.4 |
| O | 118,930 | 834/624 | 3,827 | 1.9 | 136.1 | 136.1 | 136.9 | 0.8 |
| P | 122,980 | 600/525 | 2,546 | 2.6 | 142.8 | 142.8 | 143.6 | 0.8 |
| Q | 125,820 | 609/434 | 2,909 | 2.2 | 148.4 | 148.4 | 149.4 | 1.0 |
| R | 128,220 | 1000/600 | 3,860 | 1.7 | 151.7 | 151.7 | 152.4 | 0.7 |
| S | 128,520 | 1000/425 | 4,007 | 1.4 | 152.3 | 152.3 | 152.8 | 0.5 |
| T | 133,800 | 330/95 | 729 | 7.6 | 162.2 | 162.2 | 162.2 | 0.0 |
| U | 136,450 | 500/300 | 3,189 | 1.7 | 168.3 | 168.3 | 169.3 | 1.0 |
| V | 138,850 | 700/415 | 4,143 | 1.3 | 169.8 | 169.8 | 170.6 | 0.8 |
| W | 140,380 | 425/190 | 1,898 | 2.7 | 171.3 | 171.3 | 171.7 | 0.4 |

[1] Feet above confluence with Potomac River

[2] Width/width within county boundary

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE S COUNTY, MD**

(UNINCORPORATED AREAS)

**FLOODWAY DATA**

MATTAWOMAN CREEK

| FLOODING SOURCE | | FLOODWAY | | | BASE FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE | WIDTH (FEET) | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| | | | | | (FEET NGVD) | | | |
| Mattawoman Creek (continued) | | | | | | | | |
| X | 142,080[1] | 53/33[3] | 578 | 8.8 | 178.6 | 178.6 | 178.6 | 0.0 |
| Y | 142,370[1] | 55/20[3] | 572 | 8.9 | 180.1 | 180.1 | 180.1 | 0.0 |
| Z | 145,620[1] | 450/485[3] | 4,874 | 1.0 | 188.4 | 188.4 | 189.1 | 0.7 |
| AA | 147,500[1] | 420 | 3,968 | 1.3 | 188.7 | 188.7 | 189.6 | 0.9 |
| Crows Branch | | | | | | | | |
| A | 5,660[2] | 25[4] | 290 | 8.3 | 145.0 | 145.0 | 145.4 | 0.4 |
| B | 5,920[2] | 32[4] | 305 | 7.9 | 145.9 | 145.9 | 145.9 | 0.0 |

[1] Feet above confluence with Potomac River

[2] Feet above confluence with Patuxent River

[3] Width/width within county boundary

[4] This width extends beyond county boundary

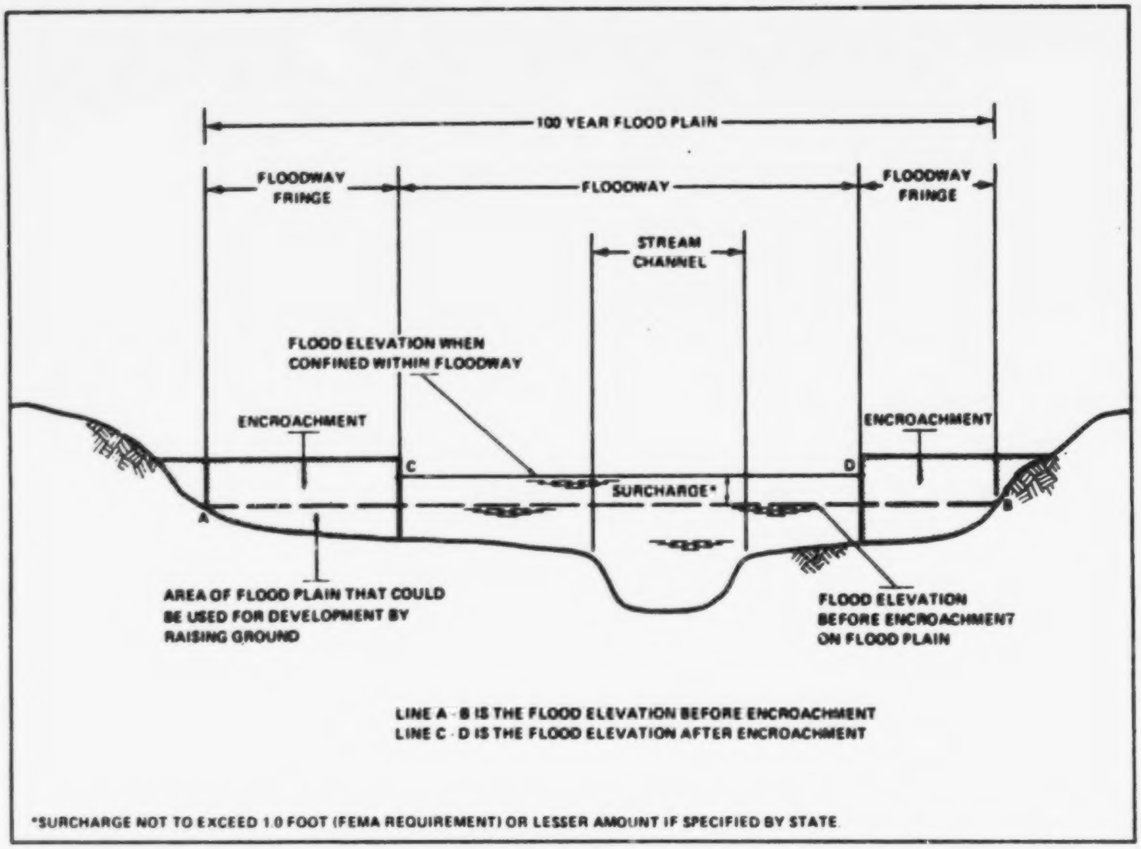
TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY
**PRINCE GEORGE S COUNTY, MD**
(UNINCORPORATED AREAS)

**FLOODWAY DATA**

MATTAWOMAN CREEK - CROWS BRANCH

without increasing the water-surface elevation of the 100-year flood by more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 28.


100 YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE*
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN

LINE A - B IS THE FLOOD ELEVATION BEFORE ENCROACHMENT
LINE C - D IS THE FLOOD ELEVATION AFTER ENCROACHMENT

*SURCHARGE NOT TO EXCEED 1.0 FOOT (FEMA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE.

**FLOODWAY SCHEMATIC** Figure 28

Since the State of Maryland does not allow surcharges to exceed 0.0 foot, FEMA and Prince George's County agreed not to develop floodways for the streams in the county. Floodways for Mattawoman Creek and Crows Branch had already been developed for contiguous communities and are, therefore, shown in this study.

## 5.0 INSURANCE APPLICATION

To establish actuarial insurance rates, data from the engineering study must be transformed into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors, and flood insurance zone designations for each flooding source studied in detail in Prince George's County.

## 5.1 Reach Determinations

Reaches are defined as sections of floodplain that have relatively the same flood hazard, based on the average weighted difference in water-surface elevations between the 10- and 100-year floods. This difference may not have a variation greater than that indicated in the following tabulation for more than 20 percent of the reach:

| Average Difference Between 10- and 100-Year Floods | Variation |
|---|---|
| Less than 2 feet | 0.5 foot |
| 2 to 7 feet | 1.0 foot |
| 7.1 to 12 feet | 2.0 feet |
| More than 12 feet | 3.0 feet |

The locations of the reaches determined for the flooding sources of Prince George's County are shown on the Flood Profiles (Exhibit 1) and summarized in Table 6.

In tidal areas, reaches are limited to the distance for which the 100-year flood elevation does not vary more than 1.0 foot. Using these criteria, reaches were required for the tidal flooding sources of Prince George's County. The locations of these reaches are shown on the Flood Insurance Rate Map and summarized in Table 6.

## 5.2 Flood Hazard Factors

The Flood Hazard Factor (FHF) is used to establish relationships between depth and frequency of flooding in any reach. This relationship is then used with depth-damage relationships for various classes of structures to establish actuarial insurance rate tables.

The FHF for a reach is the average weighted difference between the 10- and 100-year flood water-surface elevations rounded to the nearest one-half foot, multiplied by 10, and shown as a three-digit code. For example, if the difference between water-surface elevations of the 10- and 100-year floods is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference between the 10- and 100-year flood water-surface elevations is greater than 10.0 feet, it is rounded to the nearest whole foot.

## 5.3 Flood Insurance Zones

Flood insurance zones and zone numbers are assigned based on the type of flood hazard and the FHF, respectively. A unique zone number is associated with each possible FHF, and varies from 1 for a FHF of 005 to a maximum of 30 for a FHF of 200 or greater.

| FLOODING SOURCE | PANEL[1] | ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND | | | FHF | ZONE | BASE FLOOD ELEVATION[3] (NGVD) |
|---|---|---|---|---|---|---|---|
| | | 10% (10 YR.) | 2% (50 YR.) | 0.2% (500 YR.) | | | |
| Potomac River | | | | | | | |
| Reach 1 | 70,75,<br>90,95 | -3.0 | -1.1 | +2.9 | 030 | A6 | 9 |
| Reach 2 | 70,75 | -3.5 | -1.3 | +2.1 | 035 | A7 | 10 |
| Piscataway Creek | | | | | | | |
| Reach 1 | 95 | -2.7 | -0.8 | +1.9 | 025 | A5 | Varies |
| Reach 2 | 95 | -3.8 | -1.2 | +3.0 | 040 | A8 | Varies |
| Reach 3 | 50,75,<br>80,95,<br>100 | -1.5 | -0.5 | +1.3 | 015 | A3 | Varies |
| Reach 4 | 80 | -2.0 | -0.6 | +1.3 | 020 | A4 | Varies |
| Reach 5 | 80 | -1.3 | -0.4 | +0.9 | 015 | A3 | Varies |
| Tinkers Creek | | | | | | | |
| Reach 1 | 55,75,<br>80,95 | -2.0 | -0.7 | +1.3 | 020 | A4 | Varies |

[1] Flood Insurance Rate Map Panel

[2] Weighted Average

[3] Rounded to the nearest foot - see map

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE S COUNTY, MD**

(UNINCORPORATED AREAS)

**FLOOD INSURANCE ZONE DATA**

POTOMAC RIVER -
PISCATAWAY CREEK - TINKERS CREEK

| FLOODING SOURCE | PANEL[1] | ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND | | | FHF | ZONE | BASE FLOOD ELEVATION[3] (NGVD) |
|---|---|---|---|---|---|---|---|
| | | 10% (10 YR.) | 2% (50 YR.) | 0.2% (500 YR.) | | | |
| Pea Hill Branch | | | | | | | |
| Reach 1 | 75 | -1.5 | * | * | 015 | A3 | Varies |
| Reach 2 | 75,80 | -1.0 | * | * | 010 | A2 | Varies |
| Reach 3 | 80 | -1.5 | * | * | 015 | A3 | Varies |
| Burch Branch | | | | | | | |
| Reach 1 | 95 | -1.0 | -0.6 | +1.1 | 010 | A2 | Varies |
| Reach 2 | 95 | -2.0 | -0.9 | +1.4 | 020 | A4 | Varies |
| Reach 3 | 95 | -0.8 | -0.2 | +0.7 | 010 | A2 | Varies |
| Meetinghouse Branch | | | | | | | |
| Reach 1 | 55 | -1.3 | -0.5 | +0.8 | 015 | A3 | Varies |
| Broad Creek | | | | | | | |
| Reach 1 | 70,75 | -1.2 | -0.4 | +0.8 | 010 | A2 | Varies |

[1] Flood Insurance Rate Map Panel

[2] Weighted Average

[3] Rounded to the nearest foot - see map

*Not computed

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGES COUNTY, MD**

**(UNINCORPORATED AREAS)**

## FLOOD INSURANCE ZONE DATA

## PEA HILL BRANCH - BURCH BRANCH - MEETINGHOUSE BRANCH - BROAD BRANCH

| FLOODING SOURCE | PANEL[1] | ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND | | | FHF | ZONE | BASE FLOOD ELEVATION[3] (NGVD) |
|---|---|---|---|---|---|---|---|
| | | 10% (10 YR.) | 2% (50 YR.) | 0.2% (500 YR.) | | | |
| Henson Creek | | | | | | | |
| Reach 1 | 55,75 | -1.2 | -0.3 | +0.8 | 010 | A2 | Varies |
| Reach 2 | 55 | -2.1 | -0.7 | +2.5 | 020 | A4 | Varies |
| Reach 3 | 55 | -1.3 | -0.4 | +1.0 | 015 | A3 | Varies |
| Reach 4 | 55 | -2.0 | -0.6 | +1.7 | 020 | A4 | Varies |
| Reach 5 | 55 | -1.2 | -0.3 | +0.6 | 010 | A2 | Varies |
| Reach 6 | 55,60 | -1.3 | -0.4 | +0.8 | 015 | A3 | Varies |
| Reach 7 | 60 | -0.8 | -0.3 | +0.5 | 010 | A2 | Varies |
| Reach 8 | 60 | -2.5 | -1.3 | +0.8 | 025 | A5 | Varies |
| Hunters Mill Branch | | | | | | | |
| Reach 1 | 75 | -1.3 | -0.8 | +0.8 | 015 | A3 | Varies |
| Reach 2 | 75 | -4.4 | -3.3 | +1.4 | 045 | A9 | Varies |
| Reach 3 | 75 | -1.2 | -0.8 | +0.8 | 010 | A2 | Varies |
| Unnamed Tributary to Broad Creek | | | | | | | |
| Reach 1 | 75 | -0.8 | -0.3 | +0.5 | 010 | A2 | Varies |

[1] Flood Insurance Rate Map Panel

[2] Weighted Average

[3] Rounded to the nearest foot - see map

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE S COUNTY, MD**

(UNINCORPORATED AREAS)

## FLOOD INSURANCE ZONE DATA

HENSON CREEK - HUNTERS MILL BRANCH -
UNNAMED TRIBUTARY TO BROAD CREEK

| FLOODING SOURCE | PANEL[1] | ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND | | | FHF | ZONE | BASE FLOOD ELEVATION[3] (NGVD) |
|---|---|---|---|---|---|---|---|
| | | 10% (10 YR.) | 2% (50 YR.) | 0.2% (500 YR.) | | | |
| Mattawoman Creek | | | | | | | |
| Reach 1 | 90,95, 100 | -1.5 | -0.5 | +1.0 | 015 | A3 | Varies |
| Timothy Branch | | | | | | | |
| Reach 1 | 100 | -2.0 | -0.6 | +1.4 | 020 | A4 | Varies |
| Reach 2 | 100 | -1.0 | -0.3 | +0.6 | 010 | A2 | 218 |
| Oxon Run | | | | | | | |
| Reach 1 | 70 | -1.4 | -0.6 | +0.7 | 015 | A3 | Varies |
| Reach 2 | 70 | -2.3 | -0.7 | +1.2 | 025 | A5 | 22 |
| Reach 3 | 55 | -1.1 | -0.4 | +0.7 | 010 | A2 | 91 |
| Reach 4 | 40,55 | -1.3 | -0.4 | +0.7 | 015 | A3 | Varies |

[1] Flood Insurance Rate Map Panel

[2] Weighted Average

[3] Rounded to the nearest foot - see map

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE S COUNTY, MD**

(UNINCORPORATED AREAS)

## FLOOD INSURANCE ZONE DATA

MATTAWOMAN CREEK - TIMOTHY BRANCH - OXON RUN

| FLOODING SOURCE | PANEL[1] | ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND 10% (10 YR.) | 2% (50 YR.) | 0.2% (500 YR.) | FHF | ZONE | BASE FLOOD ELEVATION[3] (NGVD) |
|---|---|---|---|---|---|---|---|
| Patuxent River | | | | | | | |
| Reach 1 | 65,85 | -4.5 | -1.5 | +1.4 | 045 | A9 | Varies |
| Reach 2 | 35,50, 65 | -6.3 | -1.7 | +3.1 | 065 | A13 | Varies |
| Reach 3 | 20,35 | -7.2 | -3.6 | +3.6 | 070 | A14 | Varies |
| Reach 4 | 10,20 | -2.9 | -1.1 | +2.8 | 030 | A6 | Varies |
| Reach 5 | 10 | -2.6 | -1.1 | +3.7 | 025 | A5 | Varies |
| Reach 6 | 10 | -9.0 | -3.1 | +7.5 | 090 | A18 | Varies |
| Western Branch | | | | | | | |
| Reach 1 | 65,85 | -2.3 | -0.6 | +1.5 | 025 | A5 | Varies |
| Reach 2 | 65 | -4.0 | -0.9 | +1.8 | 040 | A8 | Varies |
| Reach 3 | 45,60, 65 | -2.6 | -0.7 | +1.8 | 025 | A5 | Varies |
| Reach 4 | 45 | -2.1 | -0.7 | +1.2 | 020 | A4 | Varies |
| Reach 5 | 45 | -1.5 | -0.5 | +0.9 | 015 | A3 | Varies |

[1] Flood Insurance Rate Map Panel

[2] Weighted Average

[3] Rounded to the nearest foot - see map

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE S COUNTY, MD**

(UNINCORPORATED AREAS)

**FLOOD INSURANCE ZONE DATA**

PATUXENT RIVER - WESTERN BRANCH

| FLOODING SOURCE | PANEL[1] | ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND | | | FHF | ZONE | BASE FLOOD ELEVATION[3] (NGVD) |
|---|---|---|---|---|---|---|---|
| | | 10% (10 YR.) | 2% (50 YR.) | 0.2% (500 YR.) | | | |
| Collington Branch | | | | | | | |
| Reach 1 | 50,65 | -1.6 | -0.6 | +1.1 | 015 | A3 | Varies |
| Reach 2 | 35,50 | -1.2 | -0.5 | +0.8 | 010 | A2 | Varies |
| Charles Branch | | | | | | | |
| Reach 1 | 85 | -1.8 | -0.6 | +1.0 | 020 | A4 | Varies |
| Reach 2 | 60,80, 85 | -1.5 | -0.5 | +1.0 | 015 | A3 | Varies |
| Southwest Branch | | | | | | | |
| Reach 1 | 45 | -1.4 | -0.6 | +1.0 | 015 | A3 | Varies |
| Reach 2 | 45 | -1.2 | -0.4 | +1.1 | 010 | A2 | Varies |
| Reach 3 | 45 | -2.0 | -0.7 | +1.3 | 020 | A4 | Varies |
| Reach 4 | 45 | -1.2 | -0.5 | +0.8 | 010 | A2 | Varies |

[1] Flood Insurance Rate Map Panel

[2] Weighted Average

[3] Rounded to the nearest foot - see map

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE S COUNTY, MD**

(UNINCORPORATED AREAS)

## FLOOD INSURANCE ZONE DATA

COLLINGTON BRANCH - CHARLES BRANCH - SOUTHWEST BRANCH

| FLOODING SOURCE | PANEL[1] | ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND | | | FHF | ZONE | BASE FLOOD ELEVATION[3] (NGVD) |
|---|---|---|---|---|---|---|---|
| | | 10% (10 YR.) | 2% (50 YR.) | 0.2% (500 YR.) | | | |
| Lottsford Branch | | | | | | | |
| Reach 1 | 45 | -1.5 | -0.6 | +0.9 | 015 | A3 | Varies |
| Reach 2 | 30 | -2.8 | -1.3 | +0.8 | 030 | A6 | Varies |
| Reach 3 | 30 | -0.9 | -0.3 | +0.5 | 010 | A2 | Varies |
| Northeast Branch-Western Branch | | | | | | | |
| Reach 1 | 45 | -2.0 | -0.8 | +0.2 | 020 | A4 | Varies |
| Reach 2 | 45 | -1.4 | -0.5 | +0.9 | 015 | A3 | Varies |
| Reach 3 | 45 | -2.0 | -0.6 | +1.0 | 020 | A4 | Varies |
| Folly Branch | | | | | | | |
| Reach 1 | 30 | -1.6 | -0.6 | +1.2 | 015 | A3 | Varies |
| Reach 2 | 30 | -2.1 | -1.2 | +4.6 | 020 | A4 | Varies |
| Reach 3 | 30 | -1.3 | -0.6 | +4.5 | 015 | A3 | Varies |

[1] Flood Insurance Rate Map Panel

[2] Weighted Average

[3] Rounded to the nearest foot - see map

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE S COUNTY, MD**

(UNINCORPORATED AREAS)

**FLOOD INSURANCE ZONE DATA**

LOTTSFORD BRANCH
NORTHEAST BRANCH-WESTERN BRANCH - FOLLY BRANCH

| FLOODING SOURCE | PANEL[1] | ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND | | | FHF | ZONE | BASE FLOOD ELEVATION[3] (NGVD) |
|---|---|---|---|---|---|---|---|
| | | 10% (10 YR.) | 2% (50 YR.) | 0.2% (500 YR.) | | | |
| Bald Hill Branch | | | | | | | |
| Reach 1 | 30,45 | -1.2 | -0.5 | +0.7 | 010 | A2 | Varies |
| Reach 2 | 30 | -1.8 | -0.8 | +1.6 | 020 | A4 | Varies |
| Reach 3 | 30 | -1.5 | -0.6 | +0.7 | 015 | A3 | Varies |
| Reach 4 | 30 | -5.2 | -2.4 | +0.3 | 050 | A10 | Varies |
| Reach 5 | 30 | -2.0 | -0.9 | +0.3 | 020 | A4 | Varies |
| Federal Spring Branch | | | | | | | |
| Reach 1 | 60,65 | -1.5 | -0.5 | +0.5 | 015 | A3 | Varies |
| Ritchie Branch | | | | | | | |
| Reach 1 | 45 | -1.4 | -0.6 | +0.7 | 015 | A3 | Varies |
| Horsepen Branch | | | | | | | |
| Reach 1 | 20 | -0.9 | -0.3 | +0.6 | 010 | A2 | Varies |
| Reach 2 | 20,35 | -2.2 | -0.7 | +1.4 | 020 | A4 | Varies |
| Reach 3 | 35 | -1.1 | -0.3 | +0.5 | 010 | A2 | Varies |

[1] Flood Insurance Rate Map Panel

[2] Weighted Average

[3] Rounded to the nearest foot - see map

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE S COUNTY, MD**

(UNINCORPORATED AREAS)

**FLOOD INSURANCE ZONE DATA**

BALD HILL BRANCH - FEDERAL SPRING BRANCH - RITCHIE BRANCH - HORSEPEN BRANCH

| FLOODING SOURCE | PANEL[1] | ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND | | | FHF | ZONE | BASE FLOOD ELEVATION[3] (NGVD) |
|---|---|---|---|---|---|---|---|
| | | 10% (10 YR.) | 2% (50 YR.) | 0.2% (500 YR.) | | | |
| Bear Branch | | | | | | | |
| Reach 1 | 10 | -1.3 | -0.4 | +1.3 | 015 | A3 | Varies |
| Reach 2 | 10 | -1.8 | -0.5 | +1.4 | 020 | A4 | Varies |
| Reach 3 | 10 | -1.2 | -0.4 | +1.4 | 010 | A2 | Varies |
| Reach 4 | 10 | -2.1 | -0.5 | +2.0 | 020 | A4 | Varies |
| Reach 5 | 10 | -1.1 | -0.3 | +1.0 | 010 | A2 | Varies |
| Reach 6 | 10 | -10.9 | -4.1 | +0.9 | 110 | A21 | Varies |
| Reach 7 | 10 | -7.1 | -2.6 | +0.7 | 070 | A14 | Varies |
| Reach 8 | 10 | -4.2 | -1.6 | +0.5 | 040 | A8 | Varies |
| Reach 9 | 10 | -0.7 | -0.2 | +0.5 | 005 | A1 | Varies |
| Anacostia River | | | | | | | |
| Reach 1 | 25,40 | -5.0 | -1.7 | +3.5 | 050 | A10 | Varies |
| Northeast Branch Anacostia River | | | | | | | |
| Reach 1 | 25 | -3.3 | -1.3 | +3.4 | 035 | A7 | Varies |
| Reach 2 | 25,30 | -2.0 | -0.8 | +1.2 | 020 | A4 | Varies |
| Reach 3 | 25,30 | -1.7 | -0.8 | +1.4 | 015 | A3 | Varies |

[1] Flood Insurance Rate Map Panel

[2] Weighted Average

[3] Rounded to the nearest foot - see map

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE S COUNTY, MD**

(UNINCORPORATED AREAS)

## FLOOD INSURANCE ZONE DATA

BEAR BRANCH - ANACOSTIA RIVER -
NORTHEAST BRANCH ANACOSTIA RIVER

| FLOODING SOURCE | PANEL[1] | ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND | | | FHF | ZONE | BASE FLOOD ELEVATION[3] (NGVD) |
|---|---|---|---|---|---|---|---|
| | | 10% (10 YR.) | 2% (50 YR.) | 0.2% (500 YR.) | | | |
| Northwest Branch Anacostia River | | | | | | | |
| Reach 1 | 25 | -3.3 | -0.4 | +5.5 | 035 | A7 | Varies |
| Reach 2 | 25 | -7.0 | -2.5 | +6.3 | 070 | A14 | Varies |
| Reach 3 | 25 | -5.3 | -1.7 | +4.2 | 055 | A11 | Varies |
| Reach 4 | 25 | -5.9 | -1.7 | +2.2 | 060 | A12 | Varies |
| Reach 5 | 15,25 | -3.9 | -1.0 | +1.8 | 040 | A8 | Varies |
| Reach 6 | 15,25, 40 | -2.8 | -0.9 | +1.5 | 030 | A6 | Varies |
| Reach 7 | 40 | -7.1 | -1.5 | +2.3 | 070 | A14 | Varies |
| Reach 8 | 40 | -4.4 | -1.6 | +2.8 | 045 | A9 | Varies |
| Reach 9 | 40 | -12.3 | -4.3 | +8.3 | 120 | A22 | 122 |
| Paint Branch | | | | | | | |
| Reach 1 | 25,30 | -1.4 | -0.6 | +1.3 | 015 | A3 | Varies |
| Reach 2 | 15,25 | -2.4 | -1.4 | +3.5 | 025 | A5 | Varies |
| Reach 3 | 15 | -3.0 | -1.1 | +2.2 | 030 | A6 | Varies |
| Reach 4 | 15 | -1.5 | -0.5 | +1.2 | 015 | A3 | Varies |
| Reach 5 | 15 | -3.2 | -0.8 | +1.9 | 030 | A6 | Varies |

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[1] Flood Insurance Rate Map Panel

[2] Weighted Average

[3] Rounded to the nearest foot - see map

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE S COUNTY, MD**

(UNINCORPORATED AREAS)

**FLOOD INSURANCE ZONE DATA**

NORTHWEST BRANCH ANACOSTIA RIVER – PAINT BRANCH

TABLE 6

| FLOODING SOURCE | PANEL[1] | ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND | | | FHF | ZONE | BASE FLOOD ELEVATION[3] (NGVD) |
|---|---|---|---|---|---|---|---|
| | | 10% (10 YR.) | 2% (50 YR.) | 0.2% (500 YR.) | | | |
| Paint Branch (continued) | | | | | | | |
| Reach 6 | 15 | -2.4 | -0.7 | +2.5 | 025 | A5 | Varies |
| Reach 7 | 15 | -6.7 | -4.3 | +9.3 | 065 | A13 | Varies |
| Reach 8 | 15 | -4.2 | -1.8 | +12.6 | 040 | A8 | Varies |
| Reach 9 | 15 | -5.9 | -2.2 | +3.9 | 060 | A12 | Varies |
| Reach 10 | 15 | -3.2 | -1.2 | +3.1 | 030 | A6 | Varies |
| Indian Creek | | | | | | | |
| Reach 1 | 15,25,<br>30 | -2.6 | -0.8 | +2.1 | 025 | A5 | Varies |
| Reach 2 | 15 | -3.8 | -1.2 | +2.8 | 040 | A8 | Varies |
| Reach 3 | 15 | -3.0 | -1.3 | +5.7 | 030 | A6 | Varies |
| Reach 4 | 15 | -1.2 | -0.5 | +1.5 | 010 | A2 | Varies |
| Reach 5 | 15 | -3.0 | -1.2 | +3.0 | 030 | A6 | Varies |
| Reach 6 | 15 | -0.8 | -0.2 | +0.7 | 010 | A2 | Varies |
| Reach 7 | 15 | -1.5 | -0.4 | +0.7 | 015 | A3 | Varies |
| Reach 8 | 15 | -4.4 | -0.1 | +0.8 | 045 | A9 | Varies |
| Reach 9 | 10 | -1.6 | -0.3 | +1.2 | 015 | A3 | Varies |

[1] Flood Insurance Rate Map Panel

[2] Weighted Average

[3] Rounded to the nearest foot - see map

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE S COUNTY, MD**

(UNINCORPORATED AREAS)

**FLOOD INSURANCE ZONE DATA**

PAINT BRANCH - INDIAN CREEK

| FLOODING SOURCE | PANEL[1] | ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND | | | FHF | ZONE | BASE FLOOD ELEVATION[3] (NGVD) |
|---|---|---|---|---|---|---|---|
| | | 10% (10 YR.) | 2% (50 YR.) | 0.2% (500 YR.) | | | |
| Beaverdam Creek | | | | | | | |
| Reach 1 | 40 | -6.3 | -3.1 | +3.2 | 065 | A13 | Varies |
| Reach 2 | 40 | -3.7 | -0.6 | +3.3 | 035 | A7 | Varies |
| Reach 3 | 40 | -2.1 | -1.0 | +2.6 | 020 | A4 | Varies |
| Reach 4 | 40 | -4.8 | -2.2 | +4.2 | 050 | A10 | Varies |
| Reach 5 | 30,40 | -3.4 | -0.8 | +2.1 | 035 | A7 | Varies |
| Reach 6 | 30 | -2.5 | -1.3 | +3.0 | 025 | A5 | Varies |
| Reach 7 | 30 | -4.7 | -2.1 | +1.4 | 045 | A9 | Varies |
| Little Paint Branch | | | | | | | |
| Reach 1 | 10,15 | -2.2 | -0.8 | +2.3 | 020 | A4 | Varies |
| Sligo Creek | | | | | | | |
| Reach 1 | 25 | -3.0 | -1.3 | +2.5 | 030 | A6 | Varies |

[1] Flood Insurance Rate Map Panel

[2] Weighted Average

[3] Rounded to the nearest foot - see map

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE S COUNTY, MD**

(UNINCORPORATED AREAS)

## FLOOD INSURANCE ZONE DATA

BEAVERDAM CREEK - LITTLE PAINT BRANCH - SLIGO CREEK

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| FLOODING SOURCE | PANEL[1] | ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND 10% (10 YR.) | 2% (50 YR.) | 0.2% (500 YR.) | FHF | ZONE | BASE FLOOD ELEVATION[3] (NGVD) |
|---|---|---|---|---|---|---|---|
| Brier Ditch | | | | | | | |
| Reach 1 | 30 | -0.4 | -0.2 | +1.4 | 005 | A1 | Varies |
| Reach 2 | 30 | -2.7 | -1.0 | +3.0 | 025 | A5 | Varies |
| Reach 3 | 30 | -3.5 | -1.5 | +8.3 | 035 | A7 | Varies |
| Long Branch | | | | | | | |
| Reach 1 | 25 | -1.5 | -0.5 | +1.2 | 015 | A3 | Varies |
| Cabin Branch | | | | | | | |
| Reach 1 | 40 | -3.7 | -0.6 | +3.3 | 035 | A7 | Varies |
| Reach 2 | 40 | -2.5 | -1.0 | +3.1 | 025 | A5 | Varies |
| Ammendale Branch | | | | | | | |
| Reach 1 | 15 | -2.6 | -0.7 | +1.7 | 025 | A5 | Varies |
| Reach 2 | 15 | -1.0 | -0.3 | +0.8 | 010 | A2 | Varies |
| Muirkirk Branch | | | | | | | |
| Reach 1 | 15 | -2.8 | -0.9 | +3.6 | 030 | A6 | Varies |
| Reach 2 | 15 | -1.2 | -0.3 | +2.5 | 010 | A2 | Varies |

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[1] Flood Insurance Rate Map Panel

[2] Weighted Average

[3] Rounded to the nearest foot - see map

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE S COUNTY, MD**

(UNINCORPORATED AREAS)

## FLOOD INSURANCE ZONE DATA

BRIER DITCH - LONG BRANCH - CABIN BRANCH - AMMENDALE BRANCH - MURKIRK BRANCH

| FLOODING SOURCE | PANEL[1] | ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND | | | FHF | ZONE | BASE FLOOD ELEVATION[3] (NGVD) |
|---|---|---|---|---|---|---|---|
| | | 10% (10 YR.) | 2% (50 YR.) | 0.2% (500 YR.) | | | |
| Barnaby Run | | | | | | | |
| Reach 1 | 55,70 | -2.4 | -0.9 | +1.2 | 025 | A5 | Varies |
| Crows Branch | | | | | | | |
| Reach 1 | 10 | -1.2 | -0.5 | +1.7 | 010 | A2 | Varies |
| Reach 2 | 10 | -2.9 | -0.8 | +3.1 | 030 | A6 | Varies |
| Reach 3 | 10 | -1.7 | -0.6 | +1.0 | 015 | A3 | Varies |
| Chesapeake Bay (Tidal flooding affecting the Patuxent River from downstream county boundary to approximately 1.9 miles downstream of State Route 4) | | | | | | | |
| Reach 1 | 85,105,<br>115,120 | -4.0 | -1.4 | +1.5 | 040 | A8 | Varies |

[1] Flood Insurance Rate Map Panel
[2] Weighted Average
[3] Rounded to the nearest foot - see map

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE S COUNTY, MD**

(UNINCORPORATED AREAS)

## FLOOD INSURANCE ZONE DATA

BARNABY RUN - CROWS BRANCH - CHESAPEAKE BAY

| | |
|---|---|
| Zone A: | Special Flood Hazard Areas inundated by the 100-year flood, determined by approximate methods; no base flood elevations shown or FHFs determined. |
| Zones A1,A2,A3,A4, A5,A6,A7,A8,A9, A10,A11,A12,A13, A14,A18,A21,A22: | Special Flood Hazard Areas inundated by the 100-year flood; with base flood elevations shown, and zones subdivided according to FHFs. |
| Zone B: | Areas between the Special Flood Hazard Areas and the limits of the 500-year flood; areas that are protected from the 100- or 500-year floods by dike, levee, or other water control structure; areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; and areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided. |
| Zone C: | Areas of minimal flooding; not subdivided. |

Flood elevation differences, FHFs, flood insurance zones, and base flood elevations for the flooding sources studied in detail in the community are shown in Table 6.

### 5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for Prince George's County is, for insurance purposes, the principal result of the Flood Insurance Study. This map contains the official delineation of flood insurance zones and base flood elevations. Base flood elevation lines show the locations of the expected whole-foot water-surface elevation of the base (100-year) flood. The base flood elevations and zone numbers are used by insurance agents, in conjunction with structure elevations and characteristics, to assign actuarial insurance rates to structures and contents insured under the National Flood Insurance Program.

## 6.0 OTHER STUDIES

Flood Insurance Studies for Charles County, Anne Arundel County, the City of Laurel, Calvert County and Howard County, Maryland, and the City of Alexandria, Virginia have been completed (References 29, 32, 33, 37, 38, and 39). The results of this study are in exact agreement with the results of those studies.

Flood Insurance Studies for the following communities have also been completed: Washington, D. C. and Montgomery County, Maryland (References 30 and 40). Tidal elevations along the Potomac River in the Washington,

D. C. study do not agree with this study. The Washington, D. C. study will be updated to reflect the results of this study. Also, Oxon Run was not studied to the upstream county boundary in this study, causing disagreement with the Washington, D. C., study. The Montgomery County study does not match this study for two reasons: 1) Tributaries 190 and 192, which were studied by detailed methods in the Montgomery County study, were not analyzed in this study; and 2) Paint Branch, Little Paint Branch, and the Northwest Branch Anacostia River were not studied to the upstream county boundary in Prince George's County, causing disagreement between the two studies.

The Flood Insurance Study for Fairfax County is currently being revised (Reference 41). The results of that study will be in exact agreement with the results of this study.

Due to a more detailed analysis, the results of this Flood Insurance Study supersede the previous study for Prince George's County (Reference 31).

## 7.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this study can be obtained by contacting FEMA, the Natural and Technological Hazards Division, Liberty Square Building (Second Floor), 105 South Seventh Street, Philadelphia, Pennsylvania 19106.

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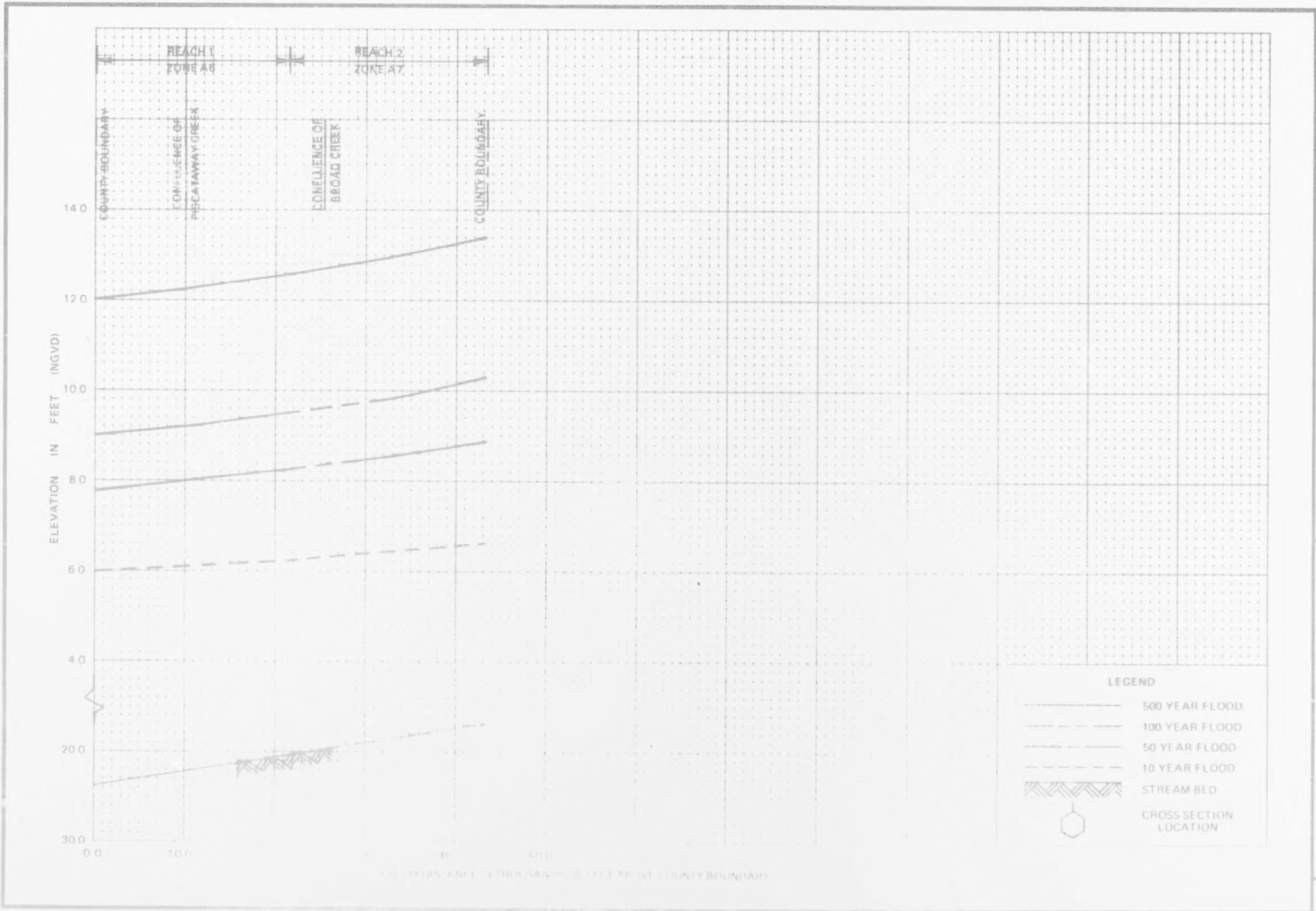


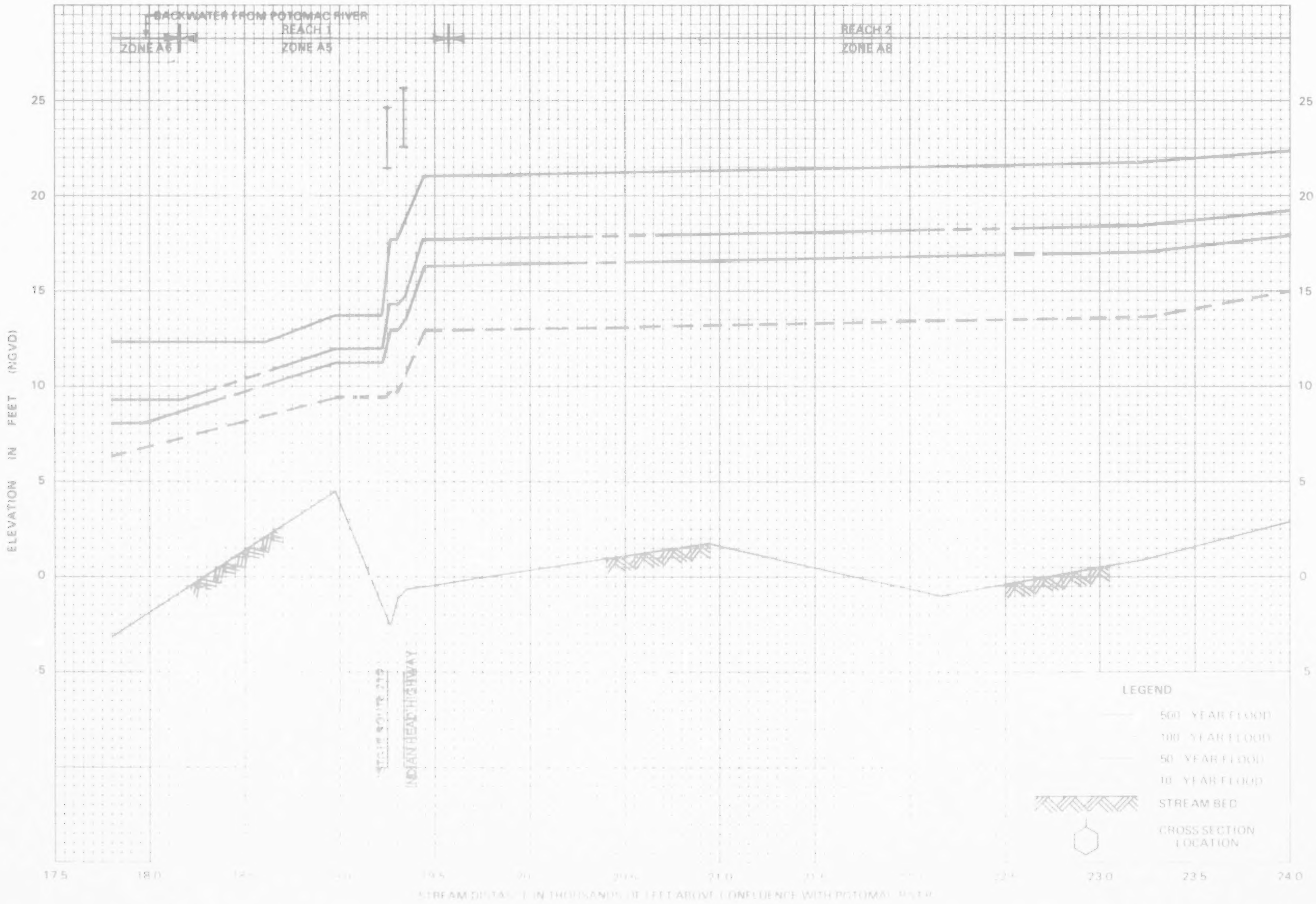
FLOOD PROFILES

POTOMAC RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

PRINCE GEORGE'S COUNTY, MD
(UNINCORPORATED AREAS)

01P



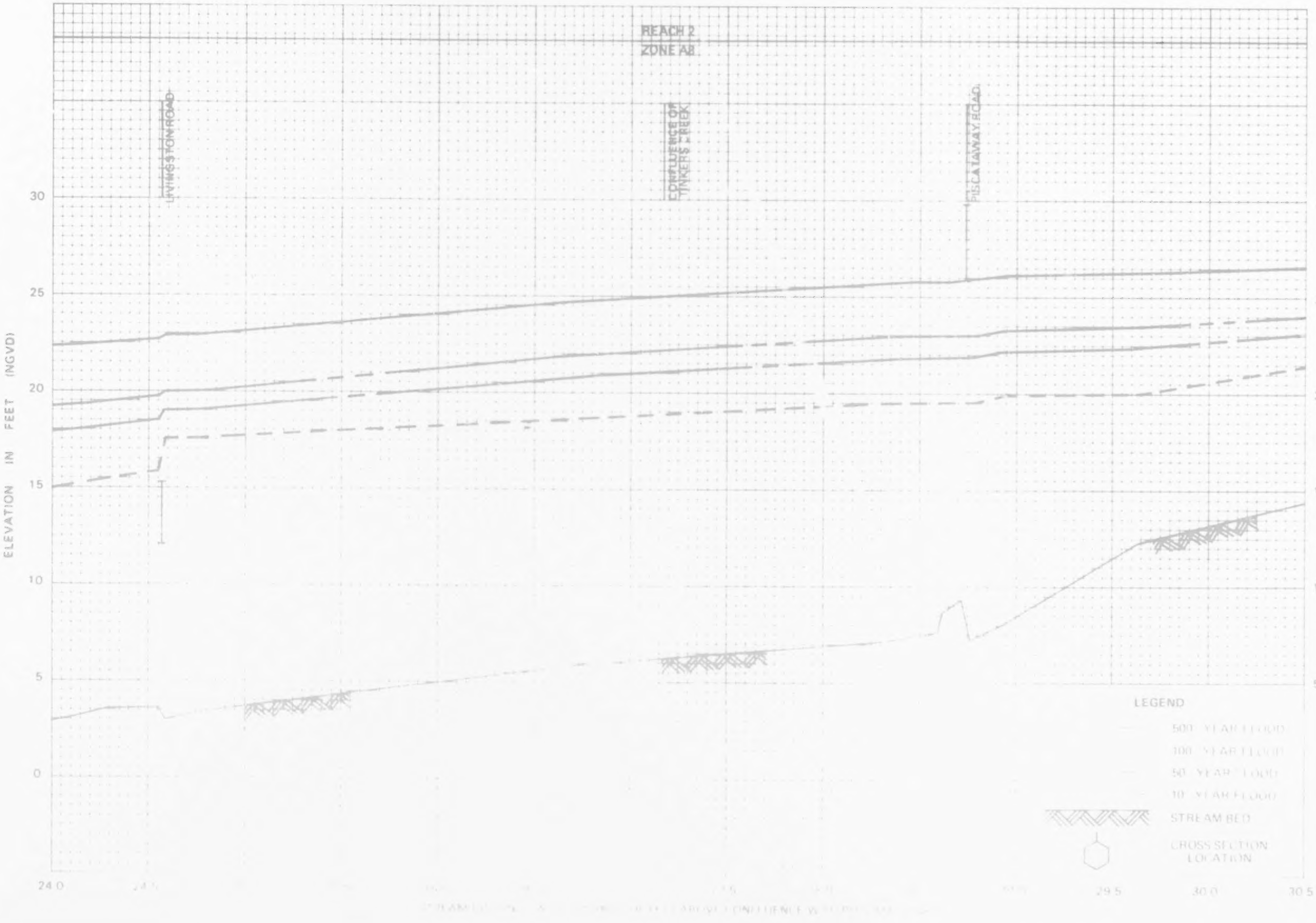
# FLOOD PROFILES

# PISCATAWAY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

(UNINCORPORATED AREAS)



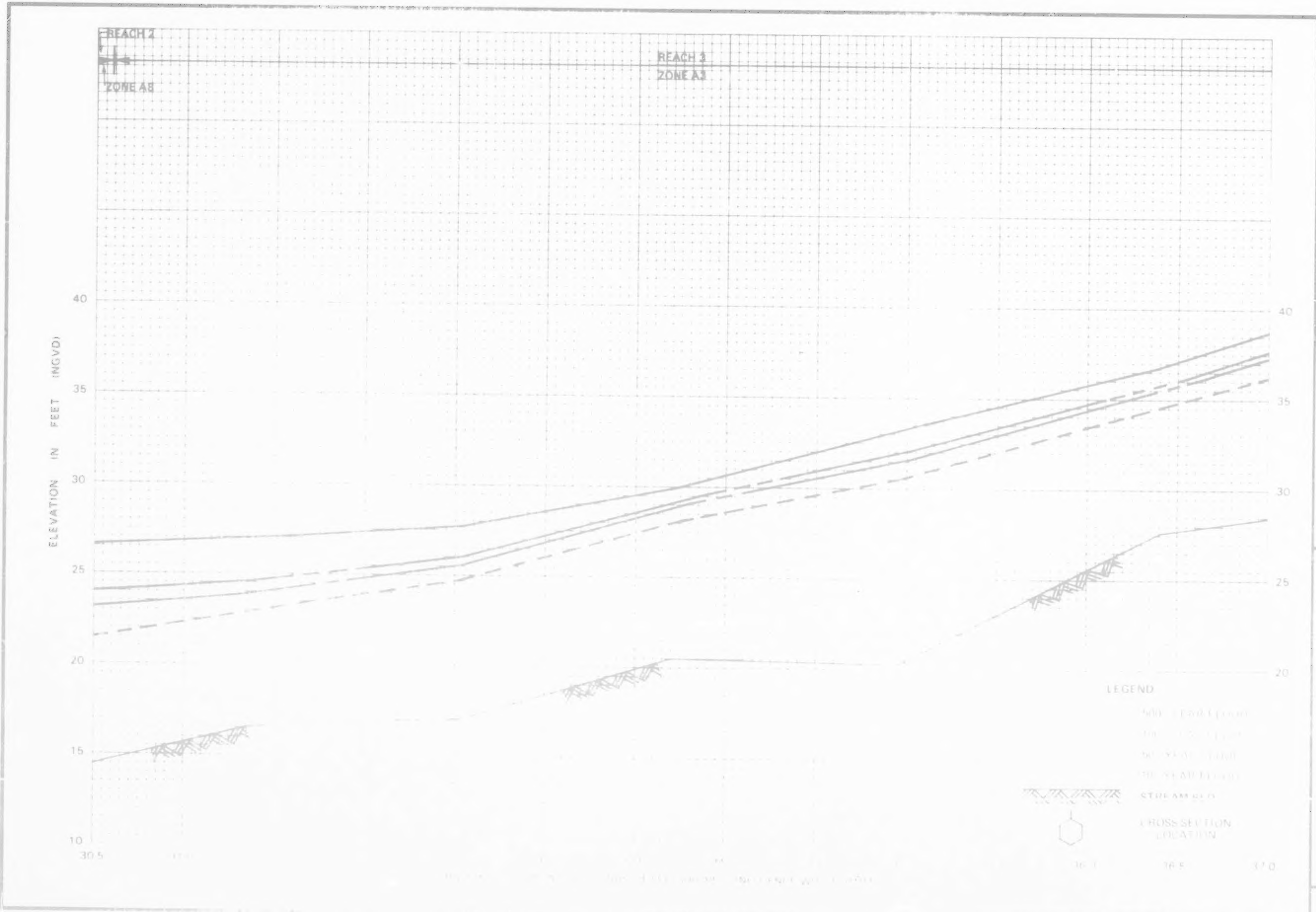
# FLOOD PROFILES

# PISCATAWAY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

(UNINCORPORATED AREAS)



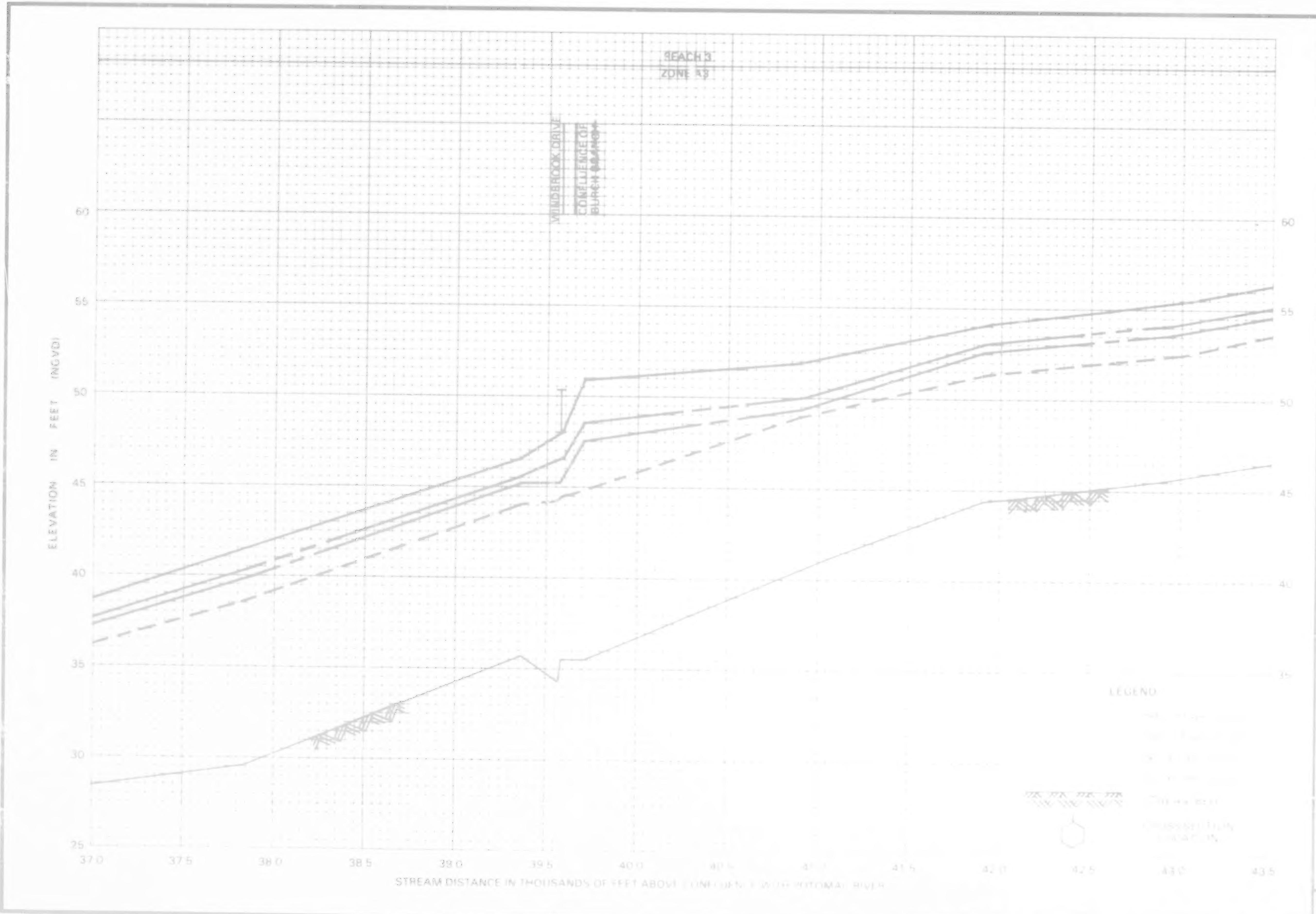
## FLOOD PROFILES

## PISCATAWAY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

(UNINCORPORATED AREAS)



FLOOD PROFILES

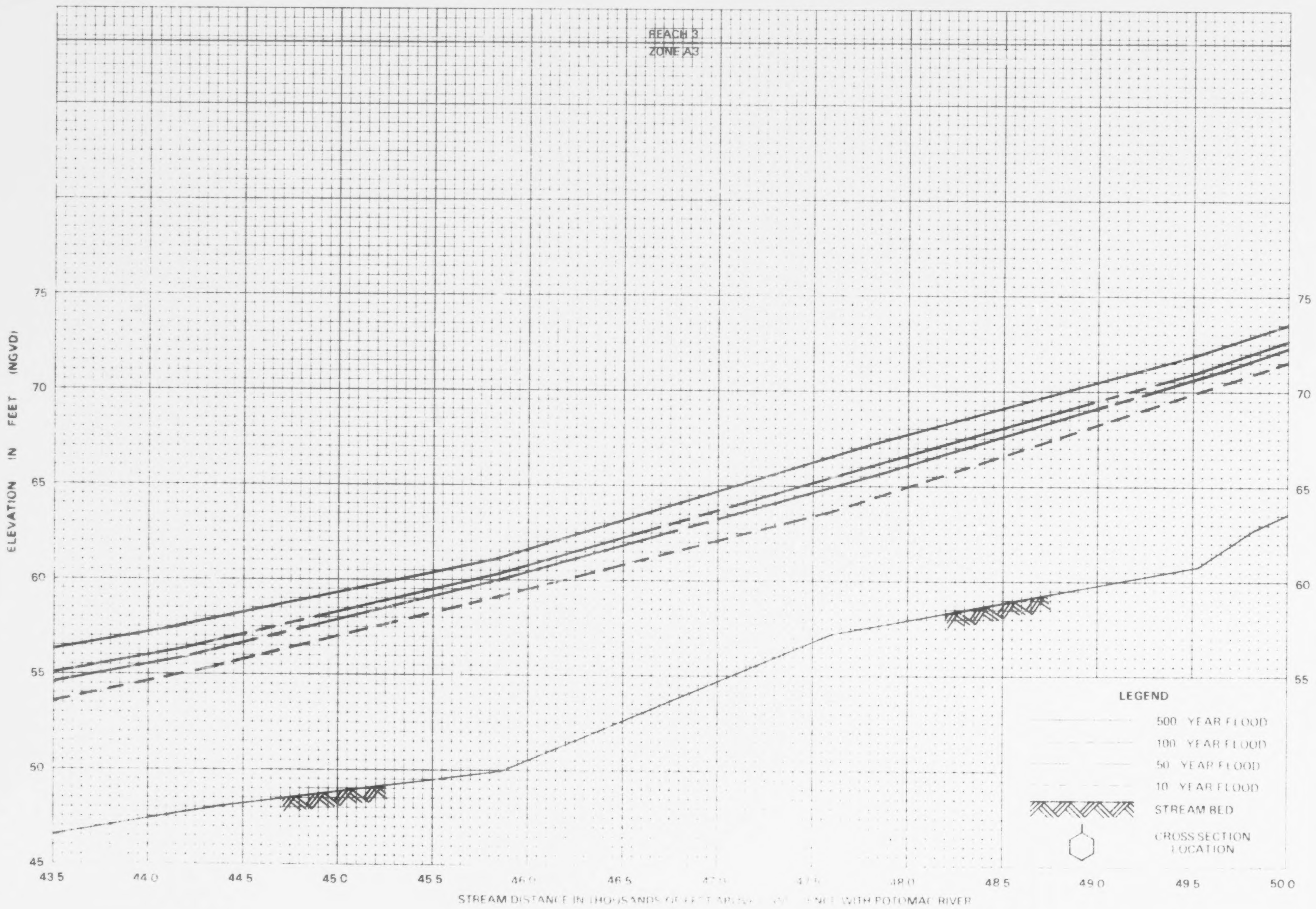
PISCATAWAY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

PRINCE GEORGE'S COUNTY, MD

(UNINCORPORATED AREAS)

05P



**FLOOD PROFILES**

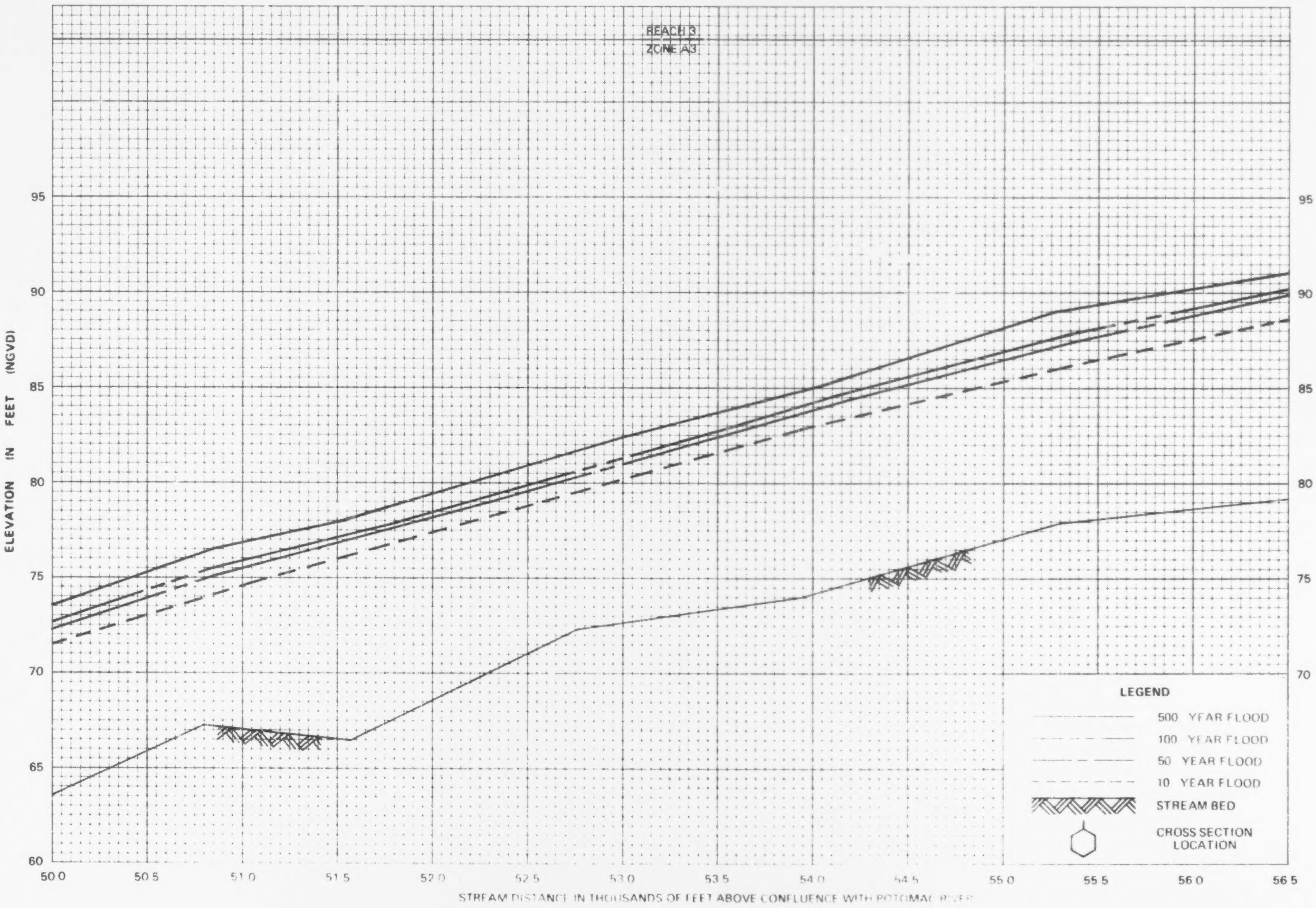
**PISCATAWAY CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

(UNINCORPORATED AREAS)

**06P**



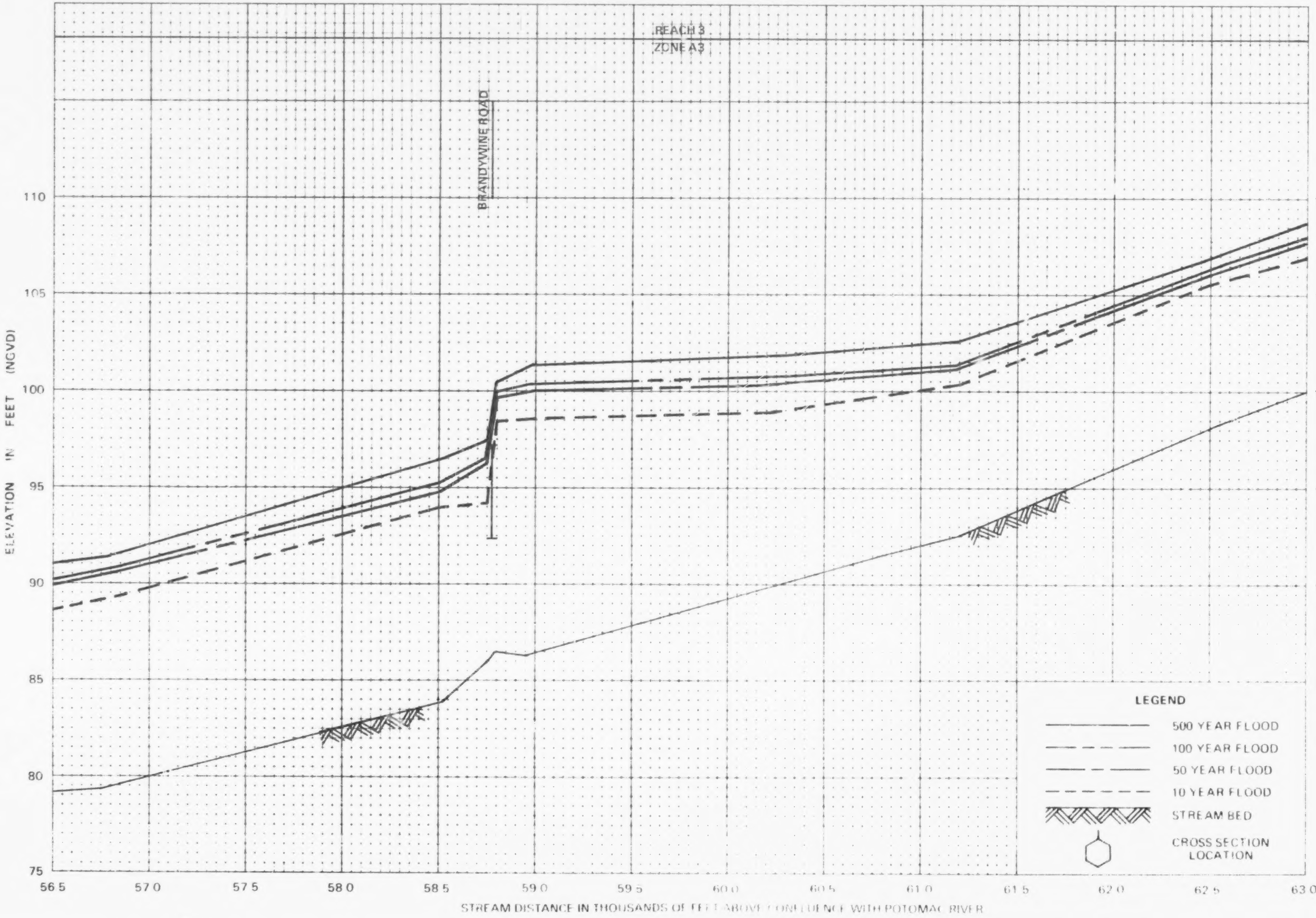
**FLOOD PROFILES**

**PISCATAWAY CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

**(UNINCORPORATED AREAS)**



# FLOOD PROFILES

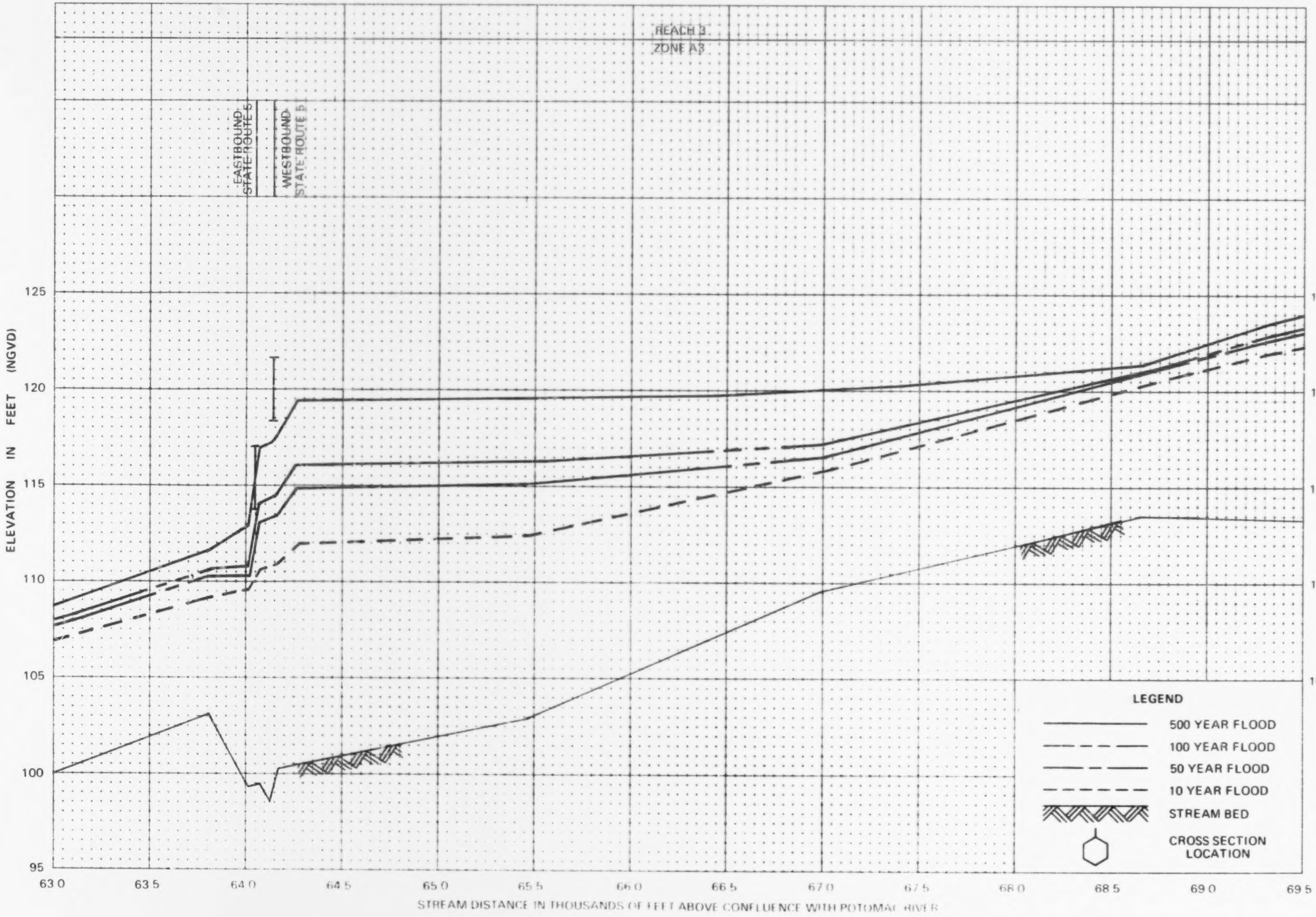
# PISCATAWAY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

(UNINCORPORATED AREAS)

**08P**



## FLOOD PROFILES

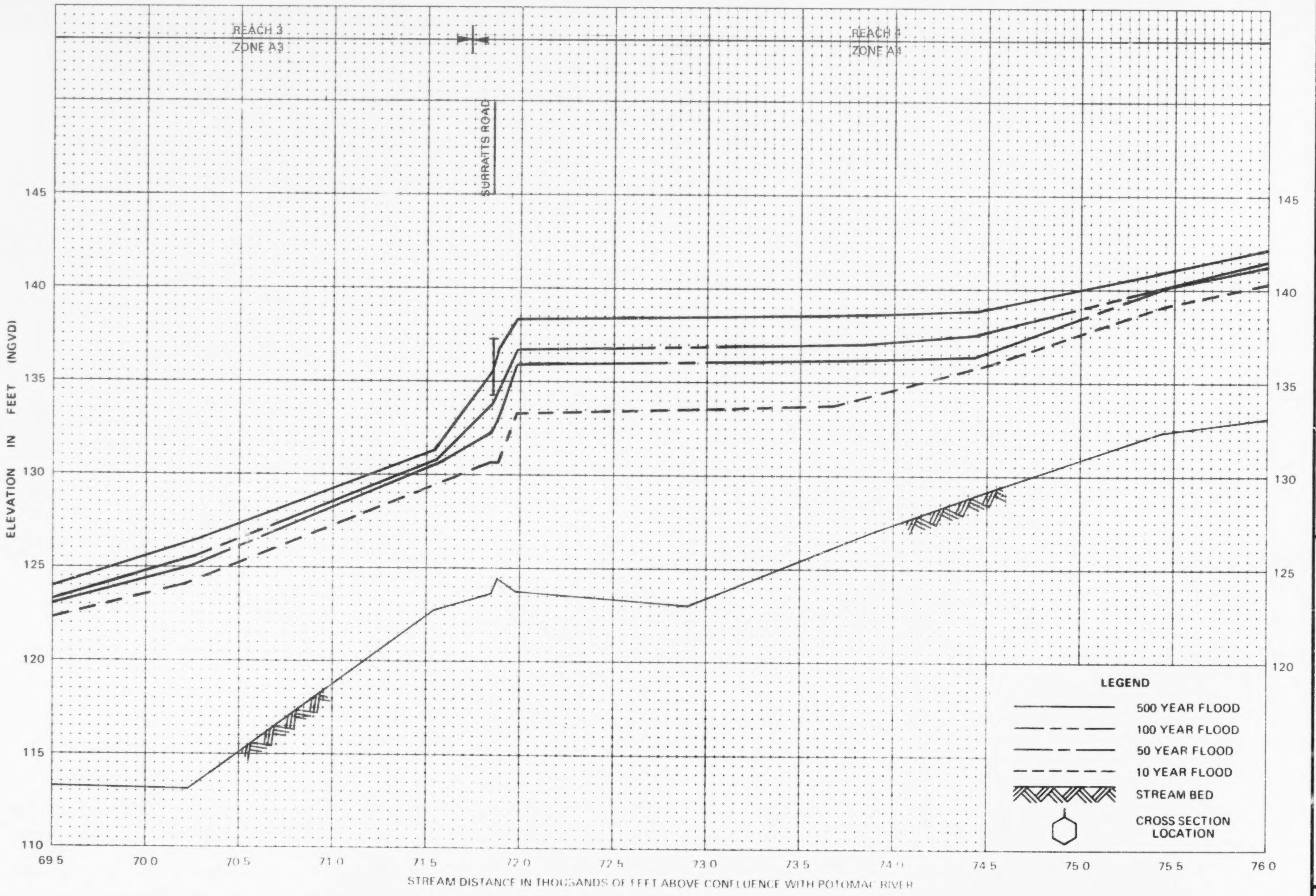
## PISCATAWAY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

(UNINCORPORATED AREAS)

09P



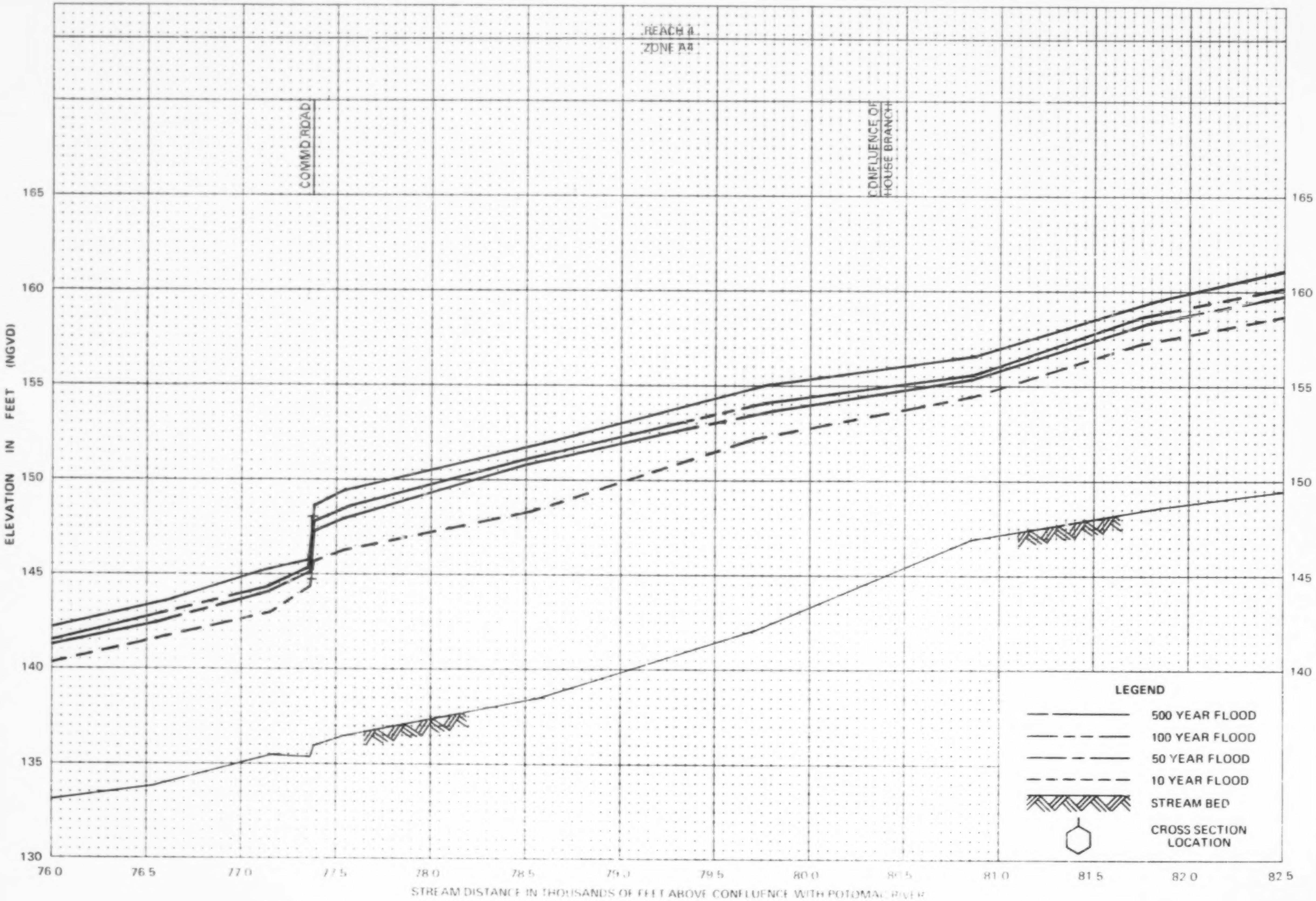
FLOOD PROFILES

PISCATAWAY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

PRINCE GEORGE'S COUNTY, MD
(UNINCORPORATED AREAS)

10P



**FLOOD PROFILES**

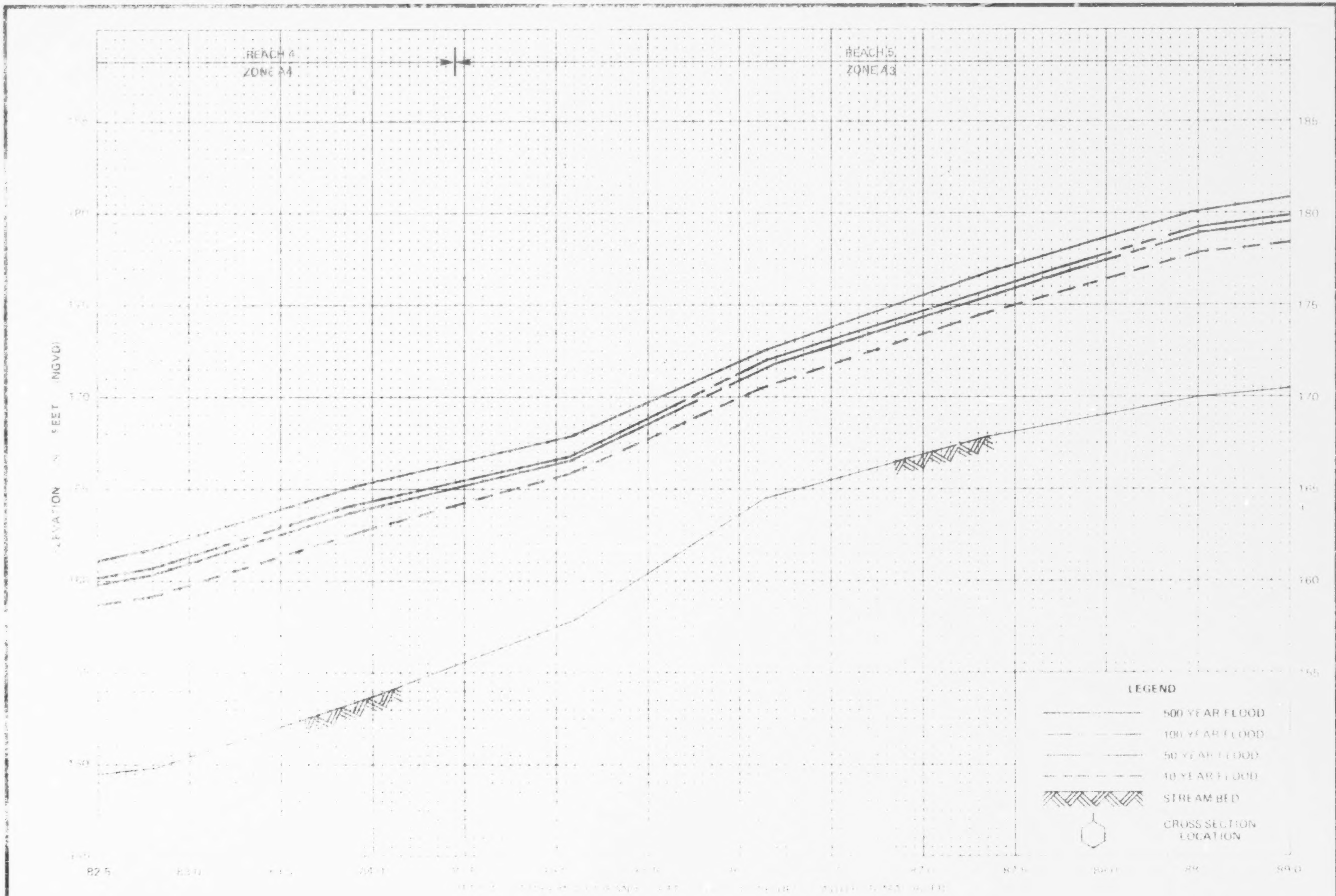
**PISCATAWAY CREEK**

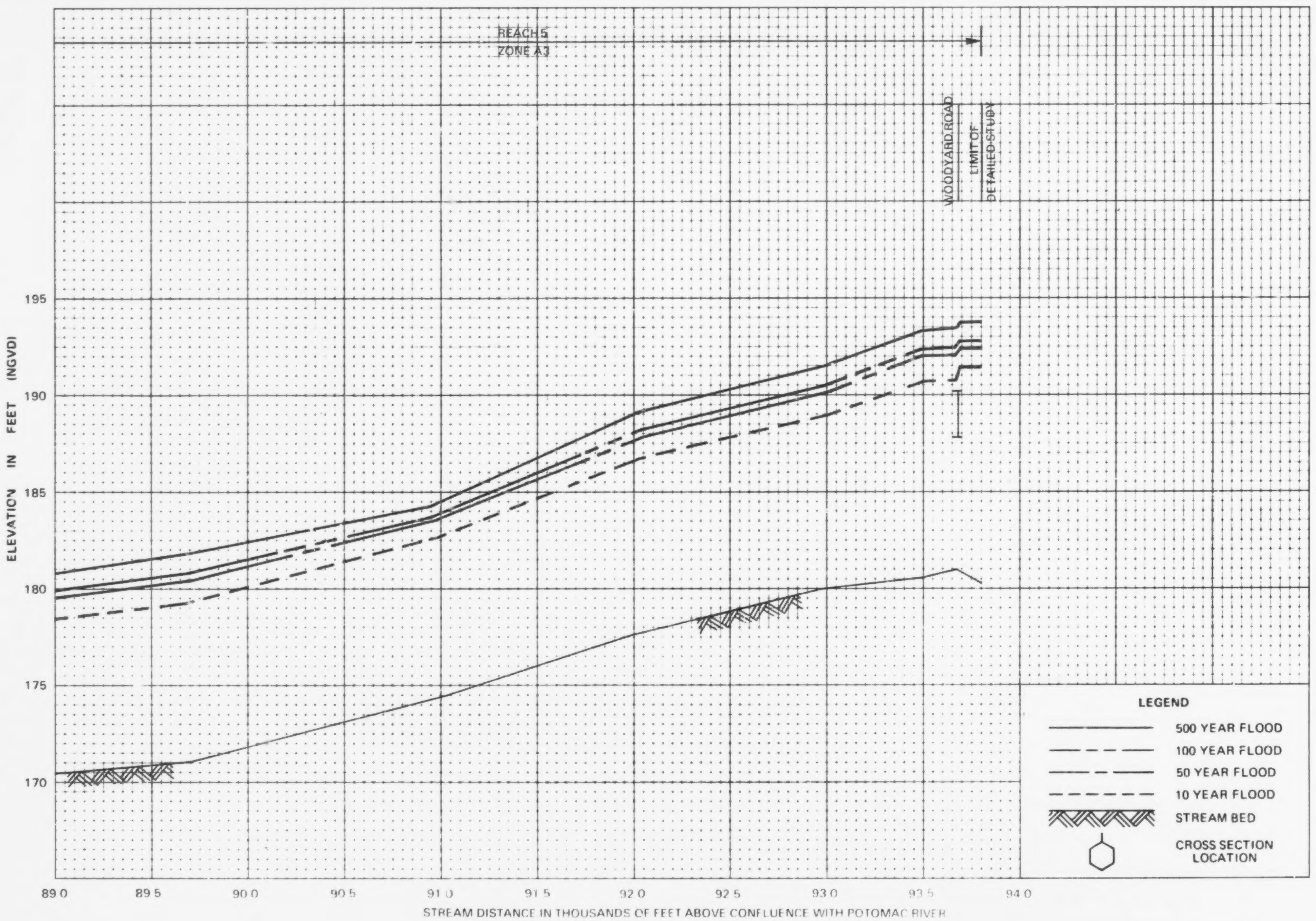
FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**
(UNINCORPORATED AREAS)

**11P**

72


REACH 4
ZONE A4
REACH 5
ZONE A3
ELEVATION IN FEET (NGVD)
185
180
175
170
165
160
155
150
82.5
83.0
84.0
87.0
87.5
88.0
88
89.0
LEGEND
500 YEAR FLOOD
100 YEAR FLOOD
50 YEAR FLOOD
10 YEAR FLOOD
STREAM BED
CROSS SECTION LOCATION



## FLOOD PROFILES

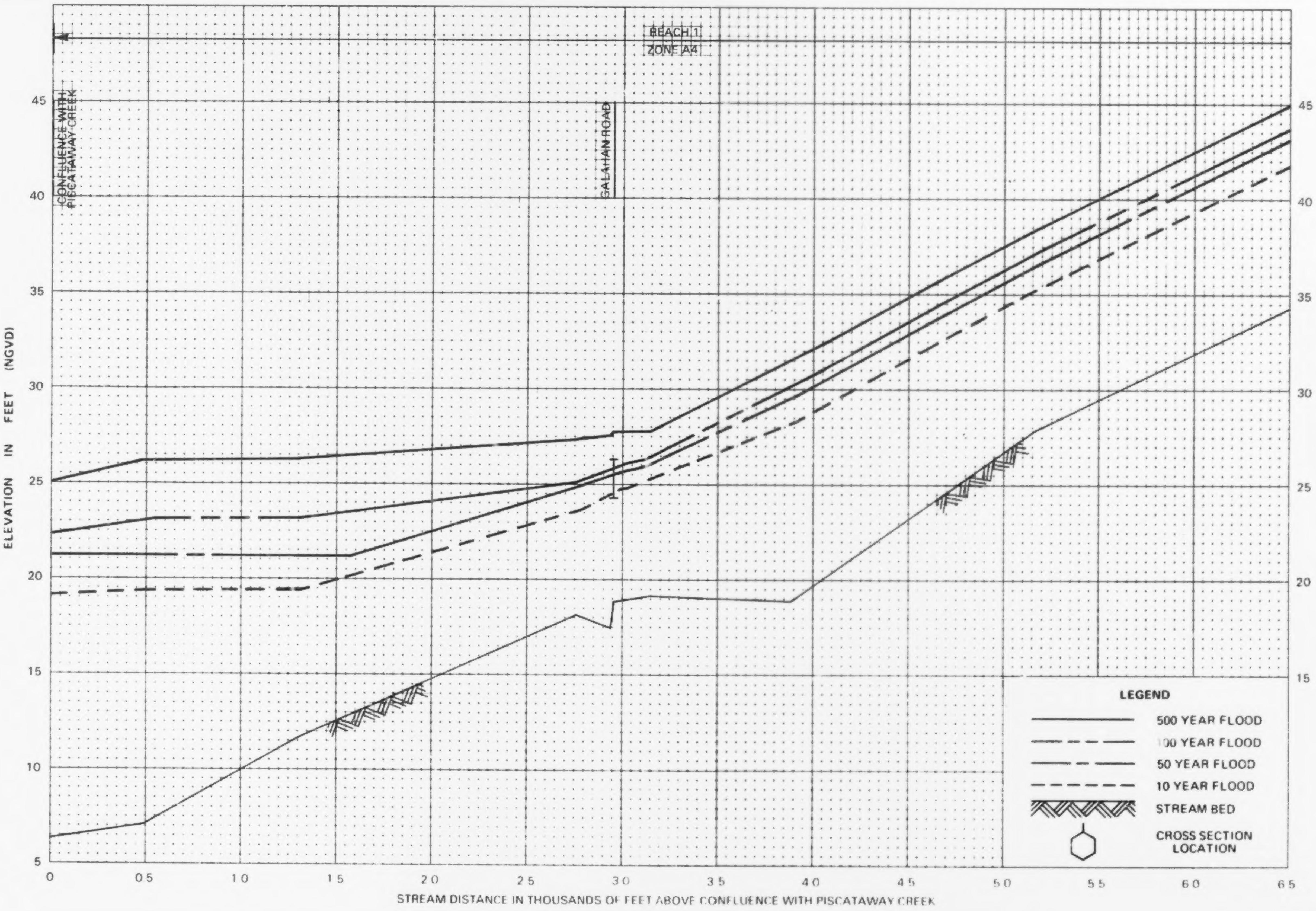
## PISCATAWAY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

(UNINCORPORATED AREAS)

13P



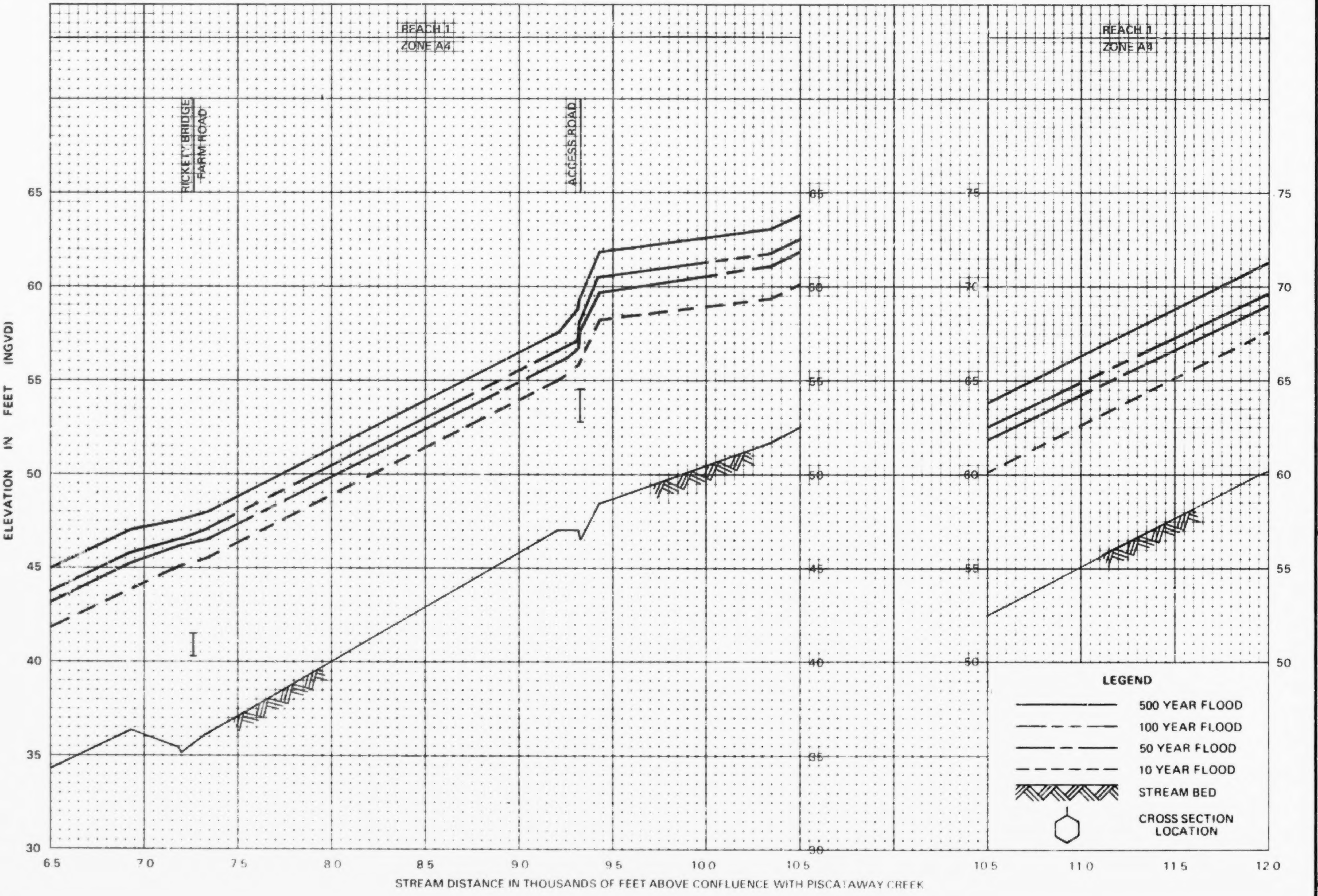
# FLOOD PROFILES

## TINKERS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

(UNINCORPORATED AREAS)



# FLOOD PROFILES

## TINKERS CREEK

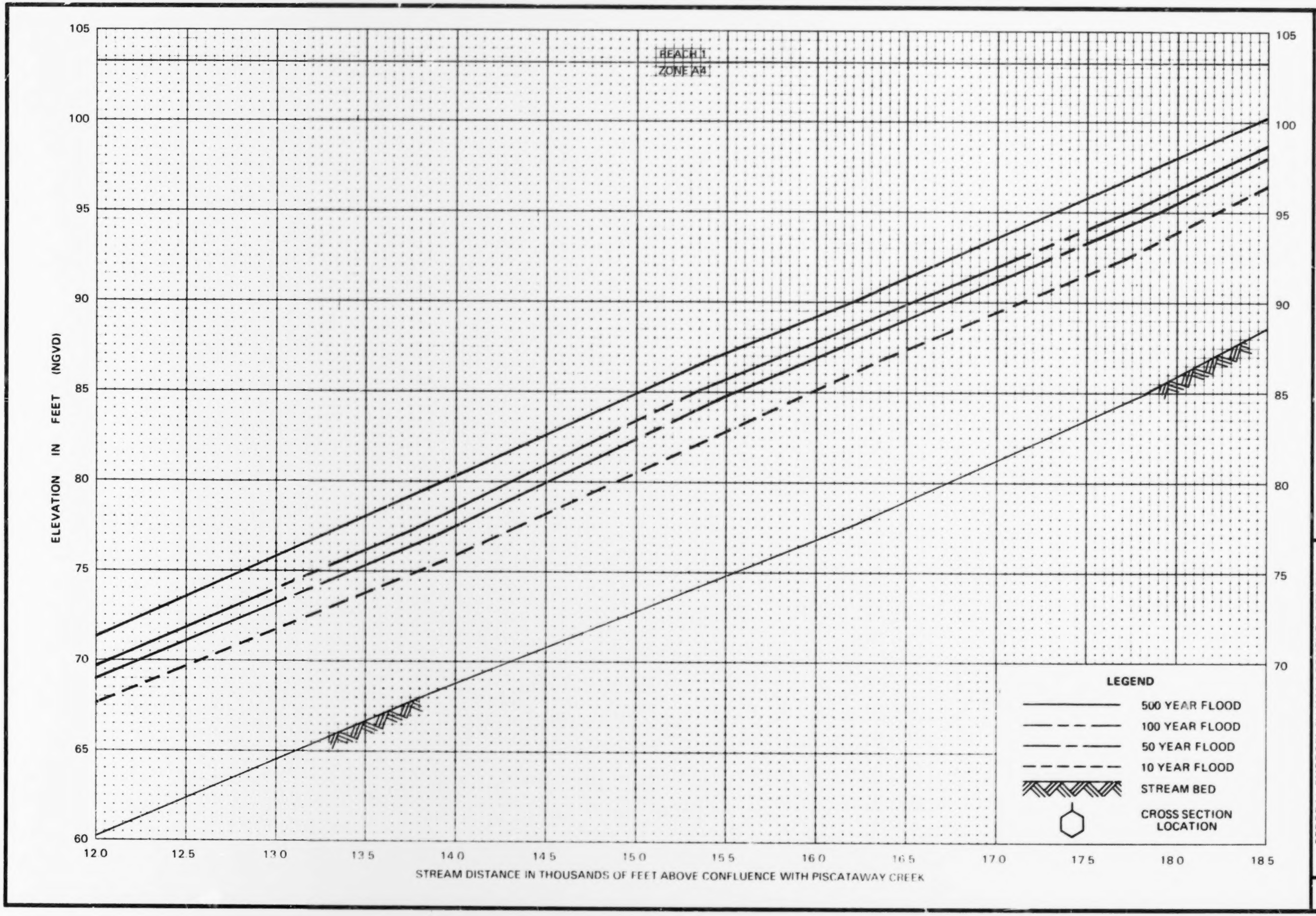
FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

(UNINCORPORATED AREAS)

**15P**

76



**FLOOD PROFILES**

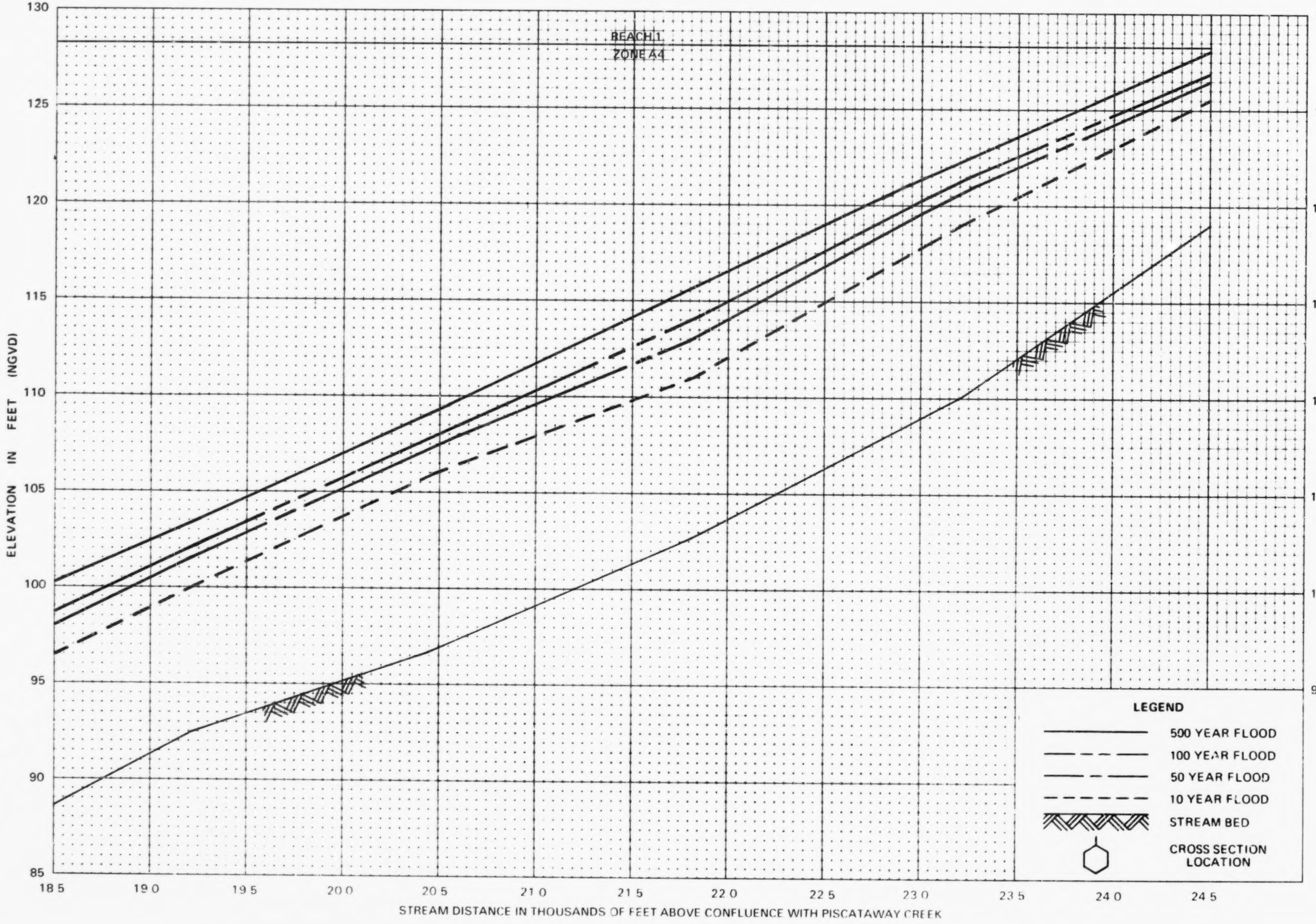
**TINKERS CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

(UNINCORPORATED AREAS)

**16P**



FLOOD PROFILES

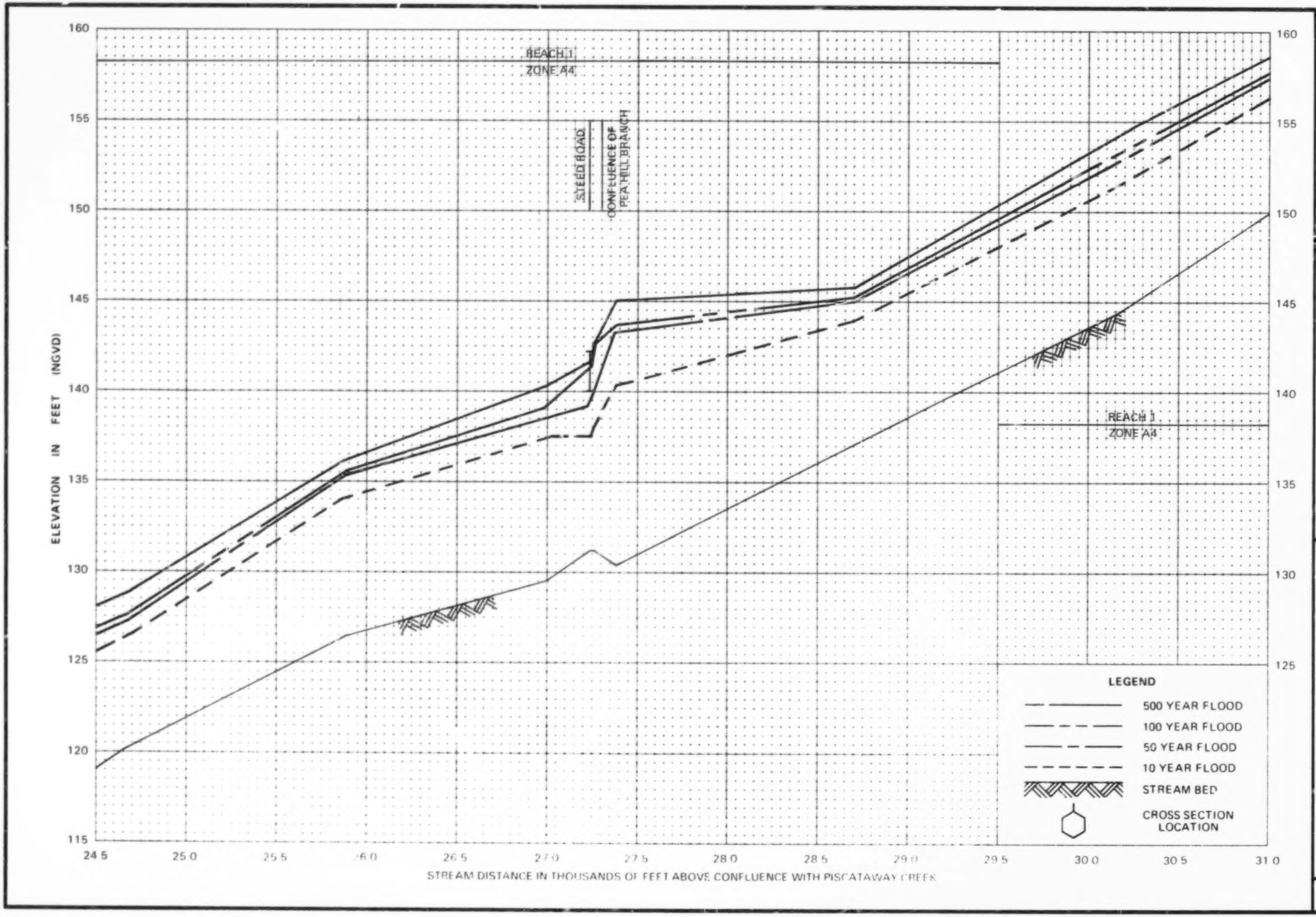
TINKERS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

PRINCE GEORGE'S COUNTY, MD
(UNINCORPORATED AREAS)

17P

25



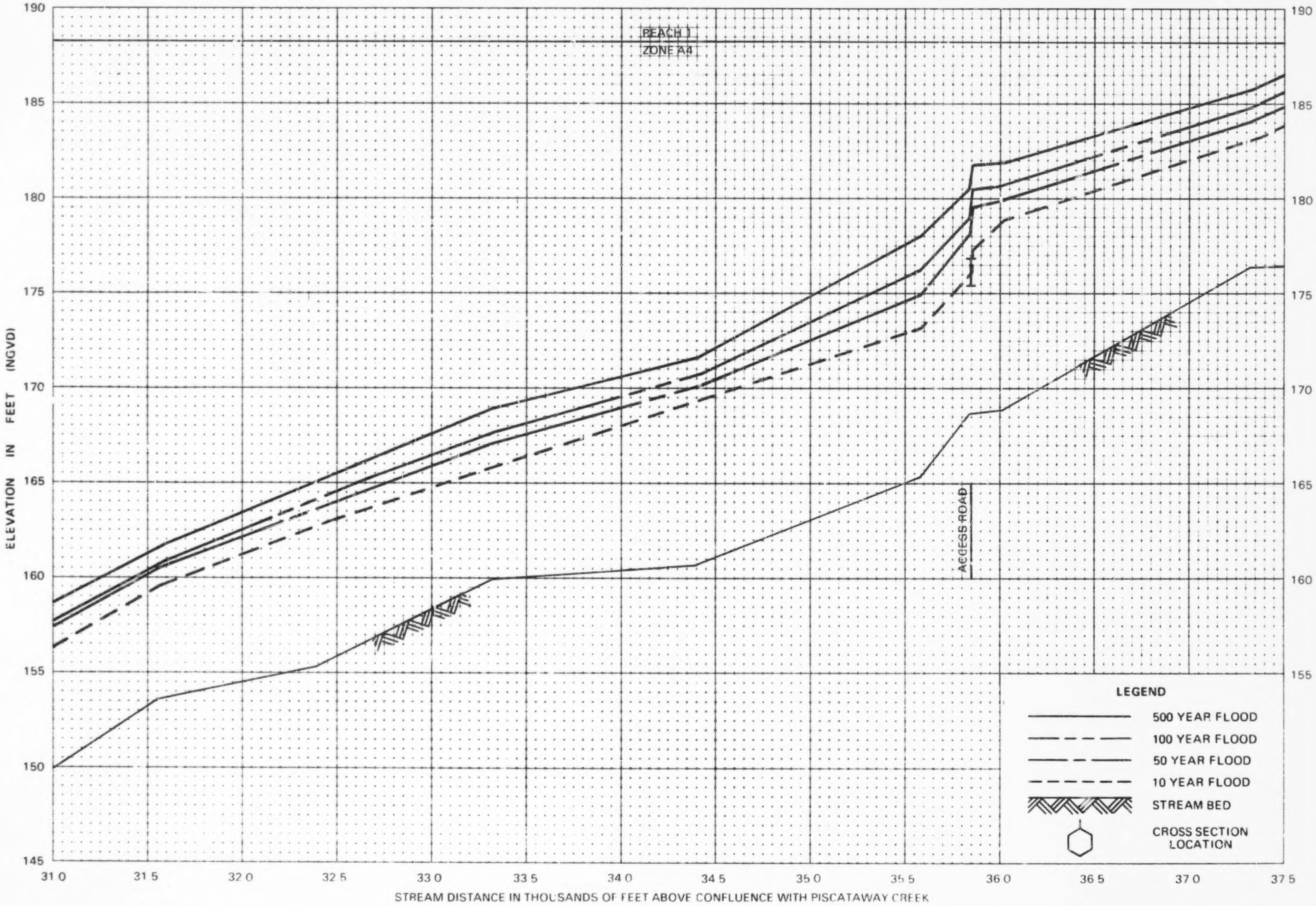
## FLOOD PROFILES

## TINKERS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**
(UNINCORPORATED AREAS)

**18P**



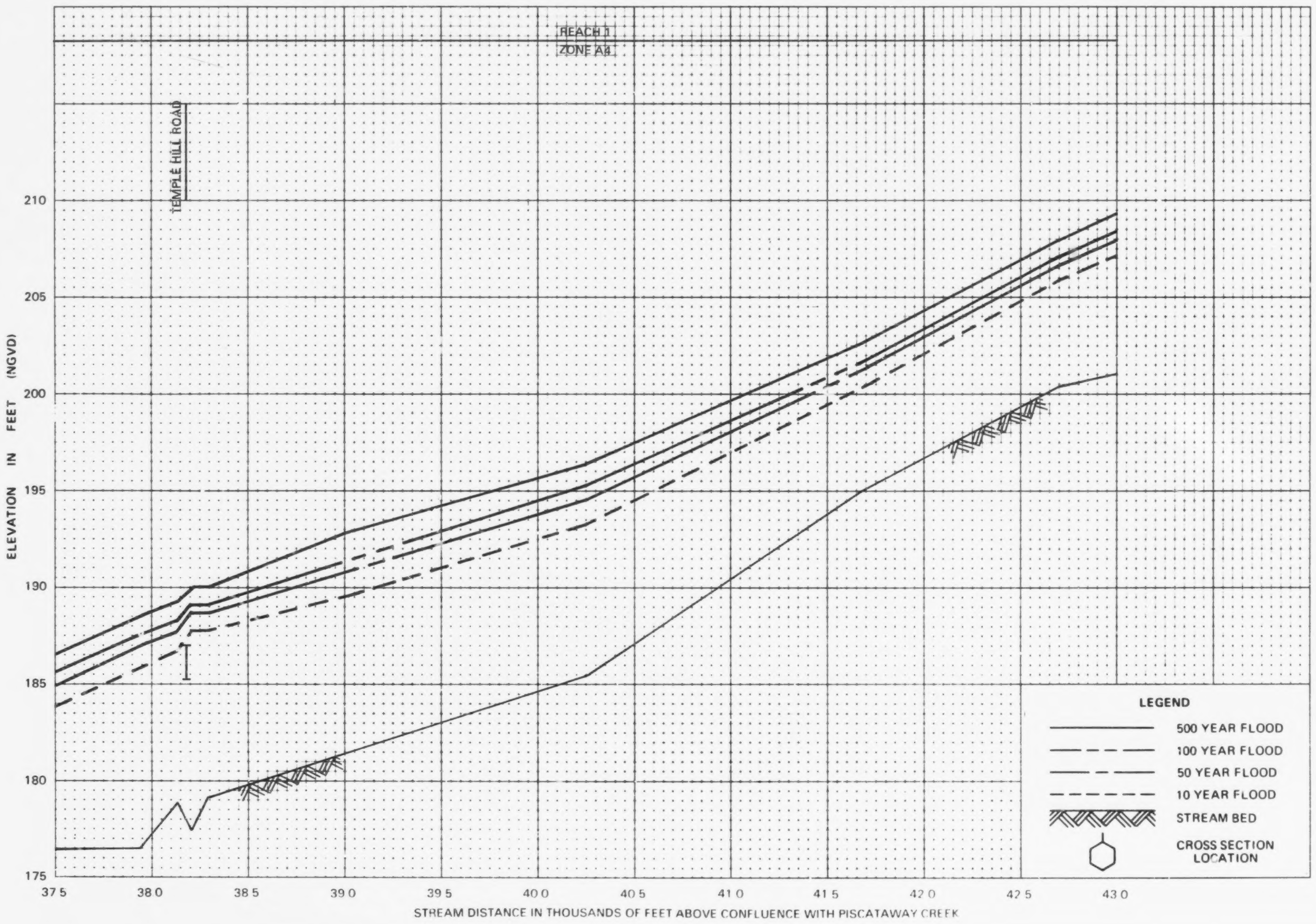
FLOOD PROFILES

TINKERS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

PRINCE GEORGE'S COUNTY, MD
(UNINCORPORATED AREAS)

80



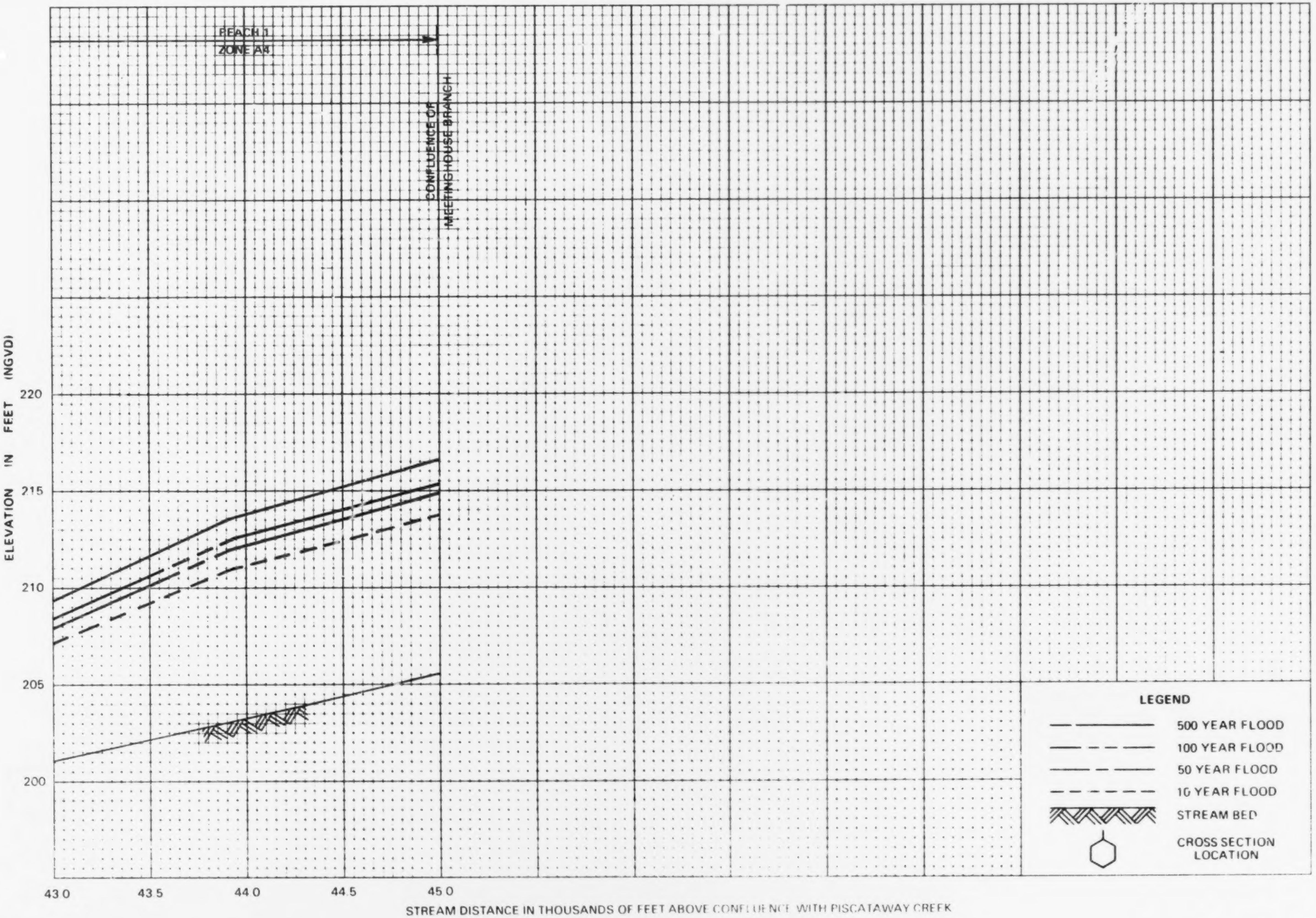
**FLOOD PROFILES**

**TINKERS CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

(UNINCORPORATED AREAS)



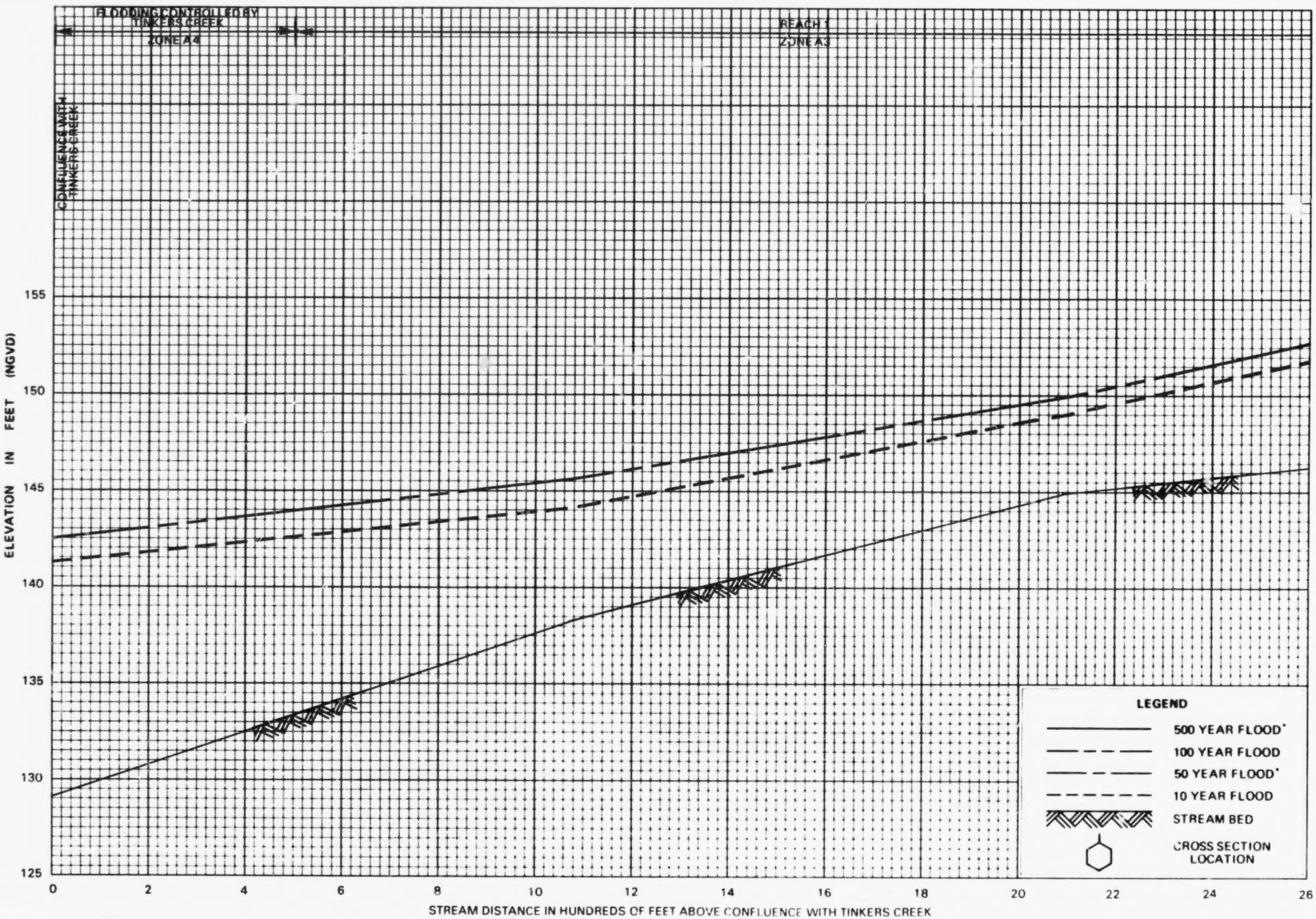
FLOOD PROFILES

TINKERS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

PRINCE GEORGE'S COUNTY, MD
(UNINCORPORATED AREAS)

21P



*NOT COMPUTED

124486

## FLOOD PROFILES

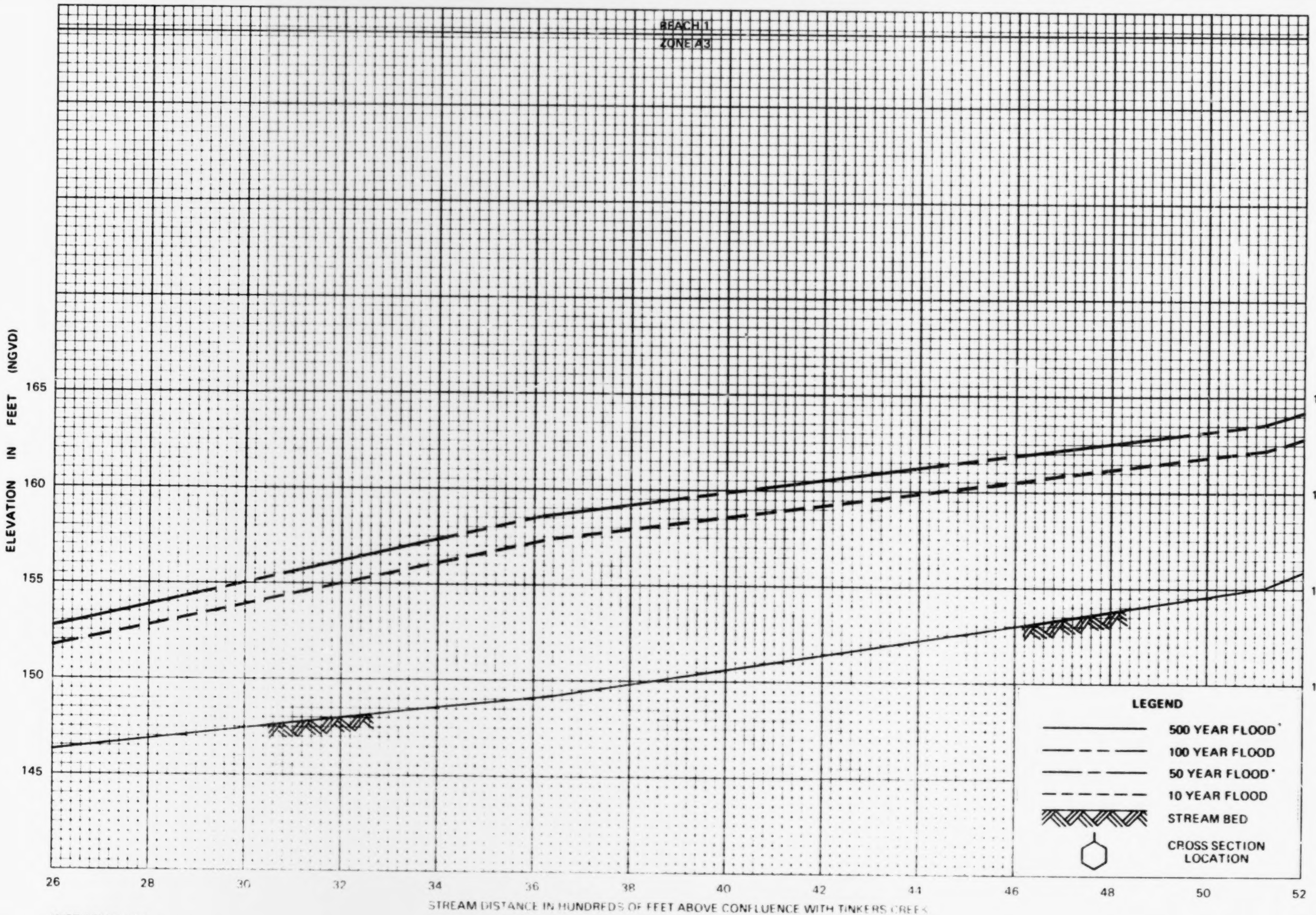
## PEA HILL BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGES COUNTY, MD**

(UNINCORPORATED AREAS)

**22P**



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## FLOOD PROFILES

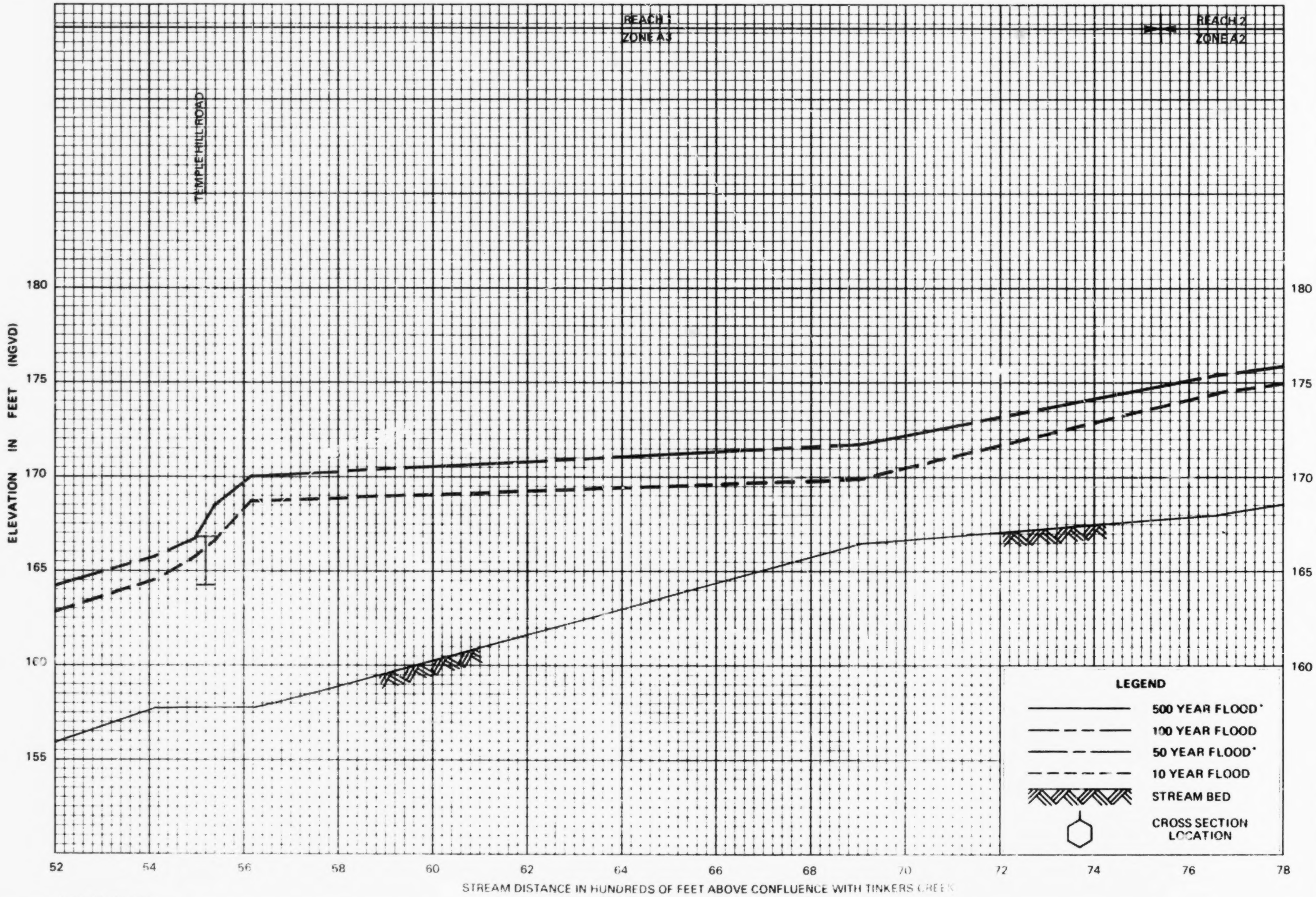
## PEA HILL BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGES COUNTY, MD**

(UNINCORPORATED AREAS)

84



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**FLOOD PROFILES**

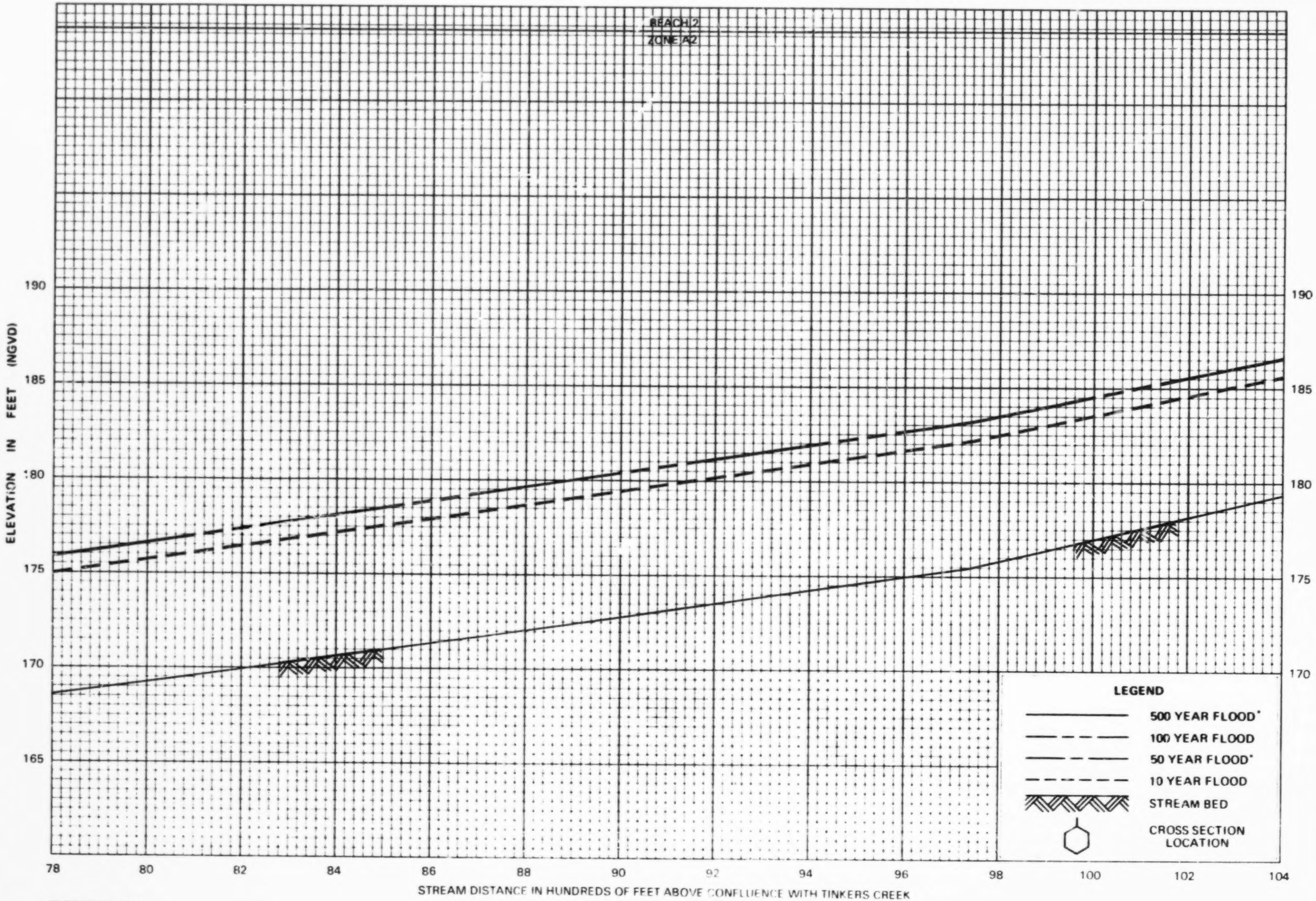
**PEA HILL BRANCH**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGES COUNTY, MD**

**(UNINCORPORATED AREAS)**

**24P**



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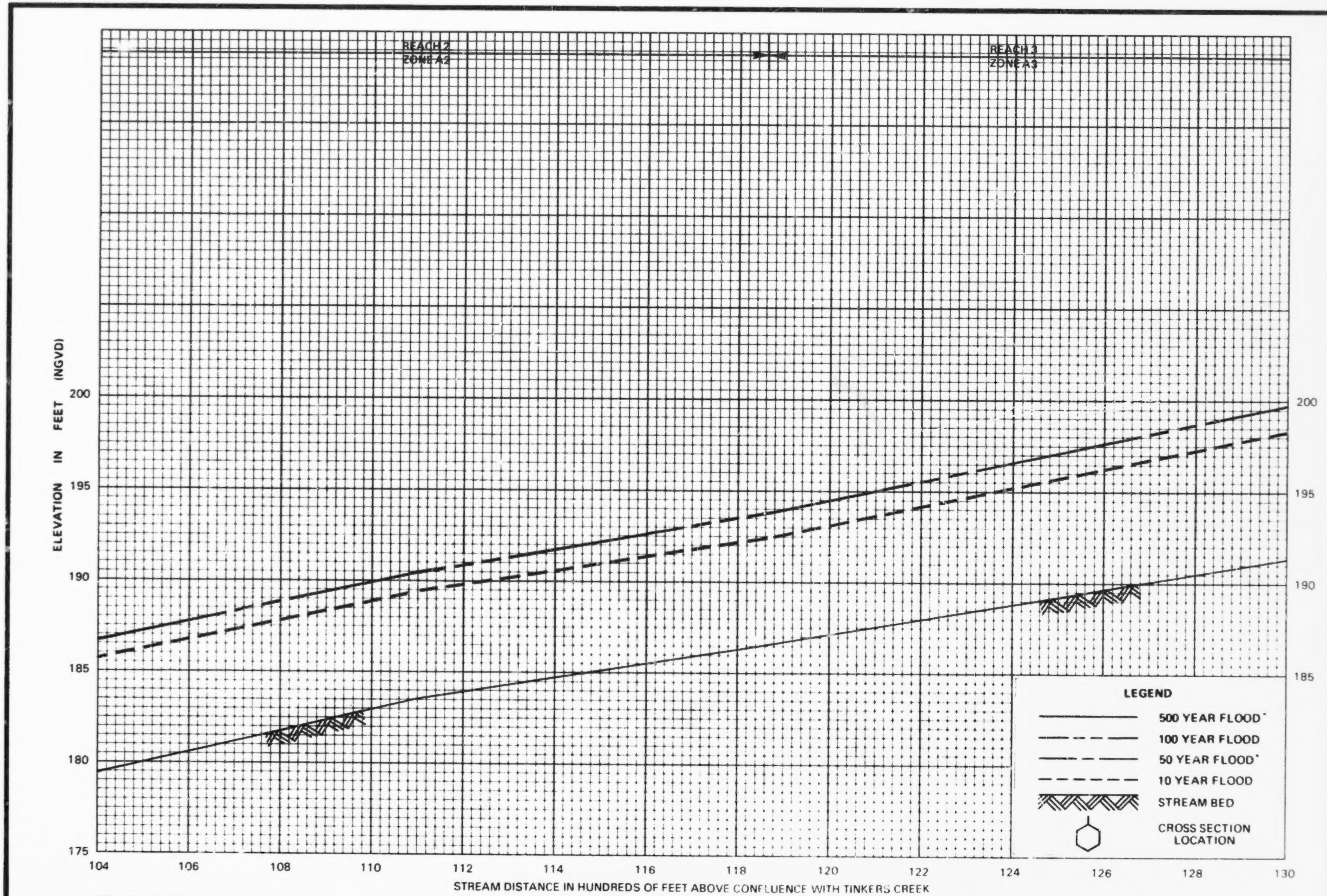
## FLOOD PROFILES

## PEA HILL BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGES COUNTY, MD**
(UNINCORPORATED AREAS)

**25P**



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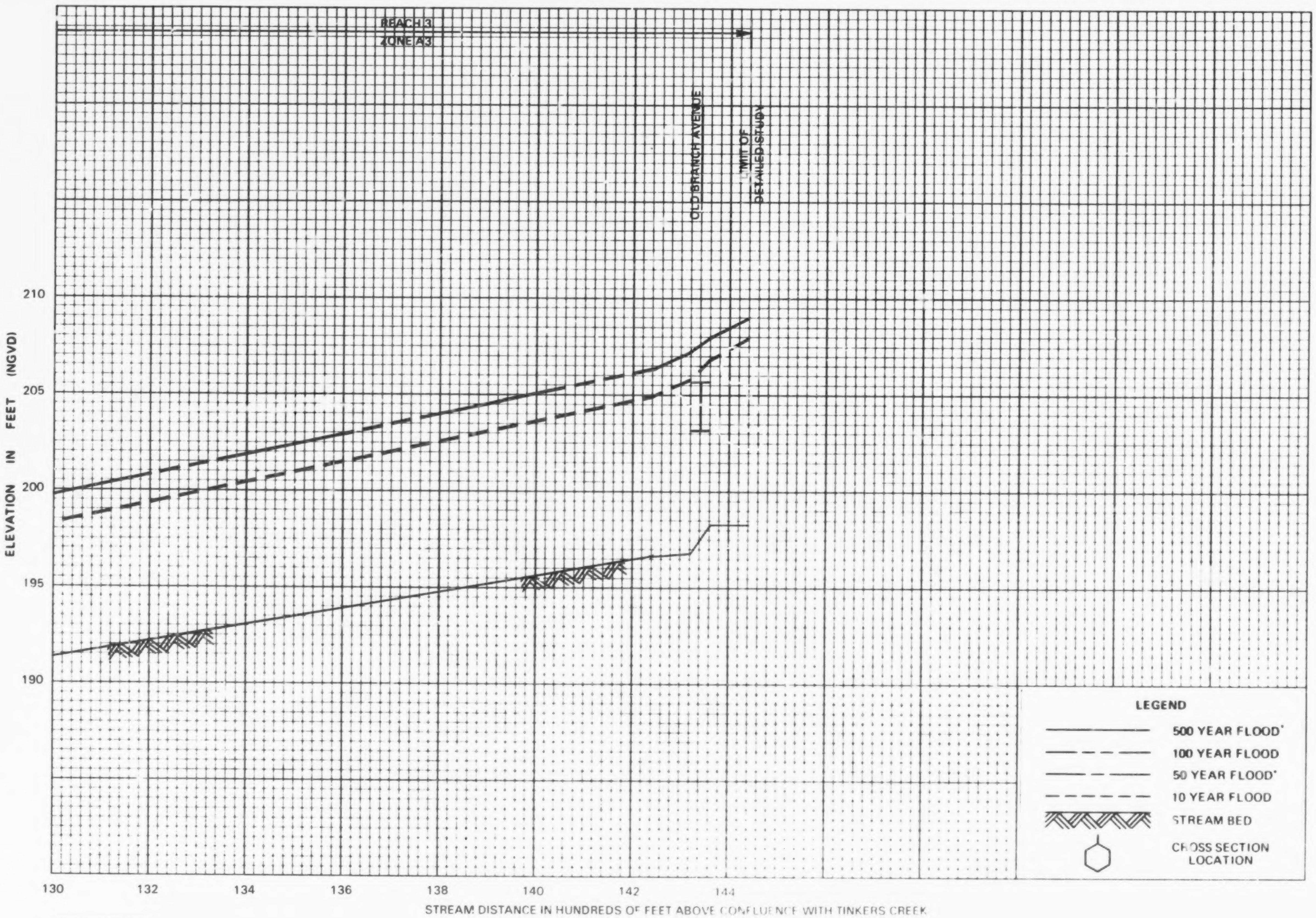
FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGES COUNTY, MD**

(UNINCORPORATED AREAS)

**FLOOD PROFILES**

26P



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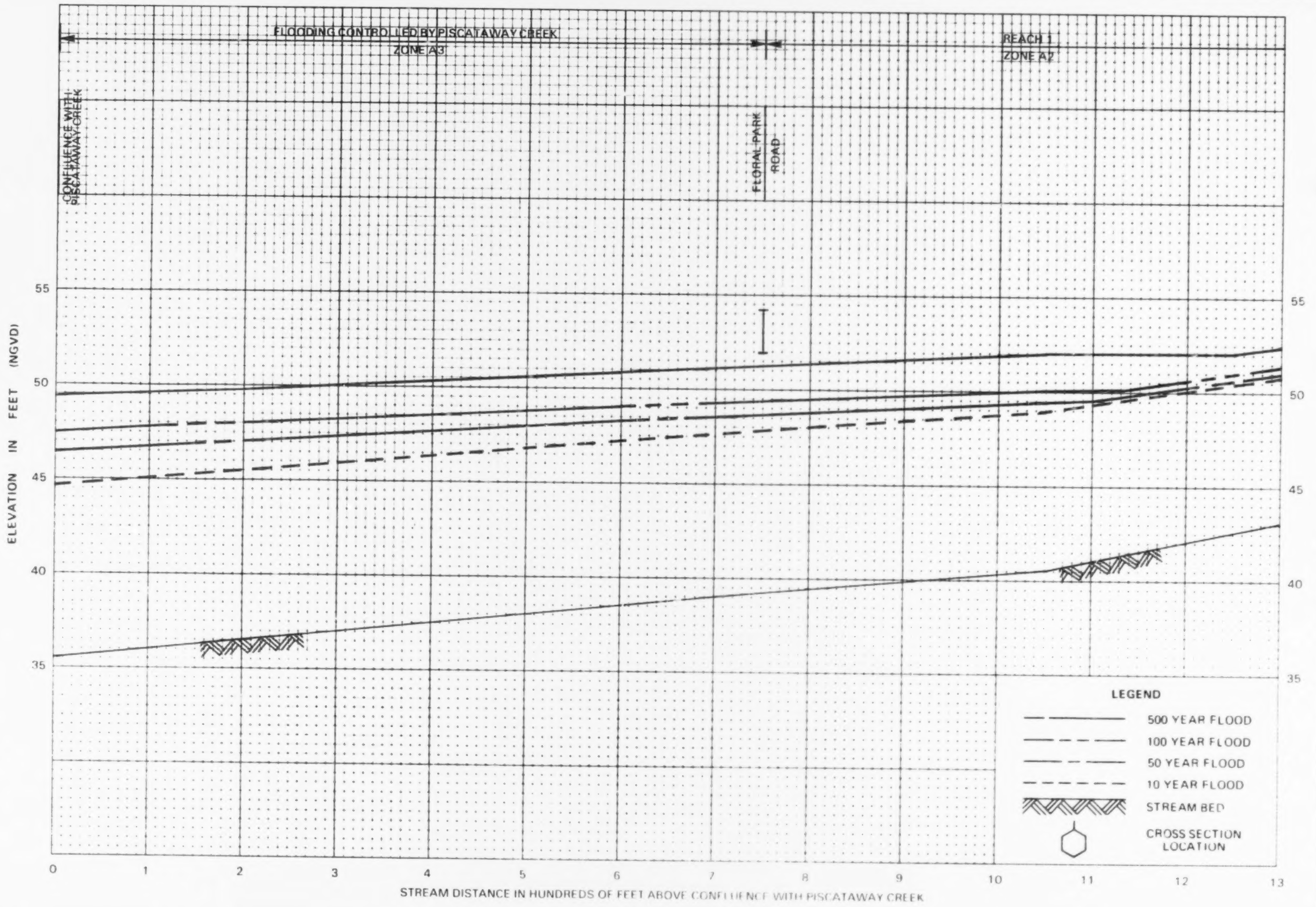
## FLOOD PROFILES

## PEA HILL BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGES COUNTY, MD**

(UNINCORPORATED AREAS)



FLOOD PROFILES

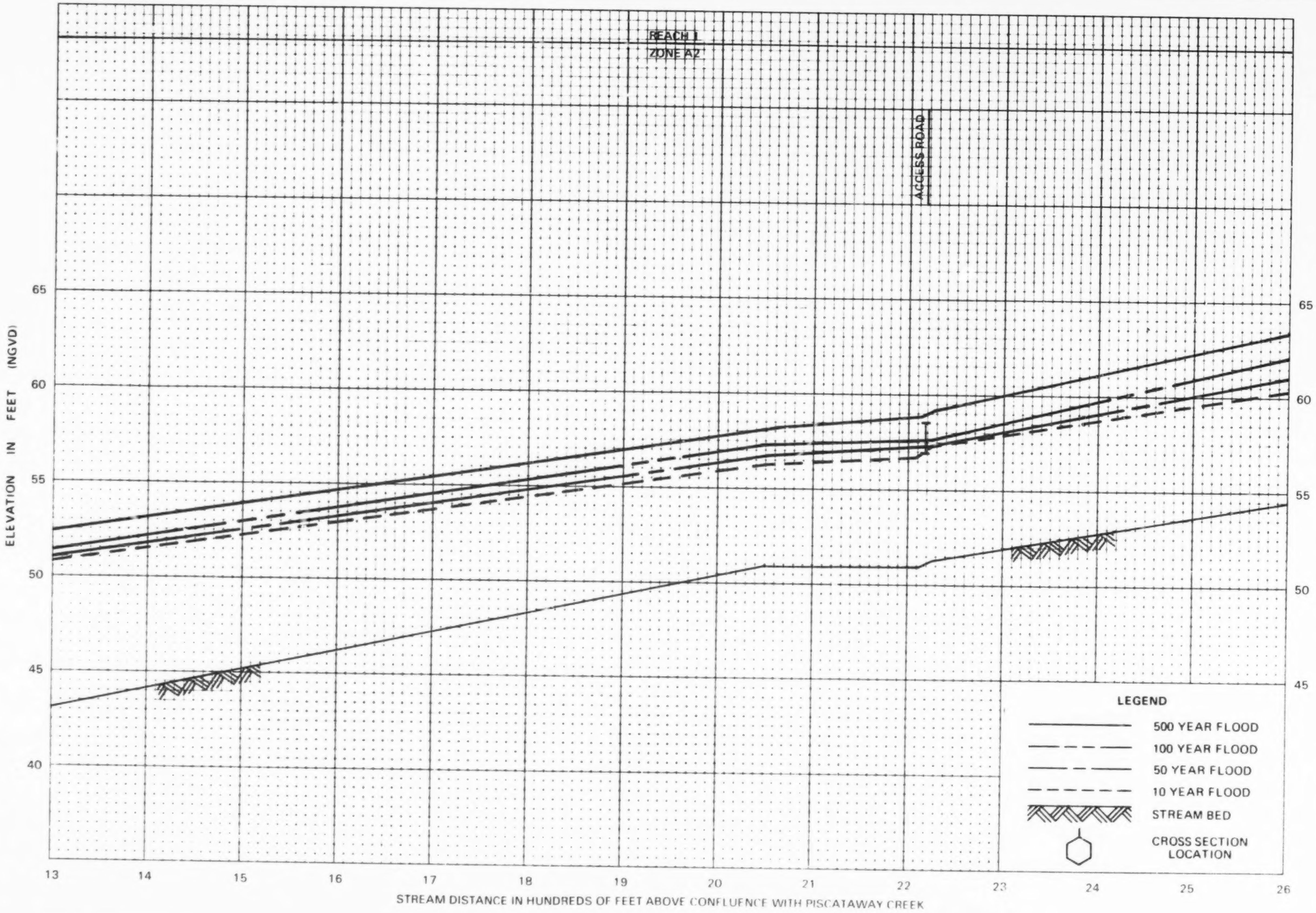
BURCH BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

PRINCE GEORGE'S COUNTY, MD
(UNINCORPORATED AREAS)

28P

64



**FLOOD PROFILES**

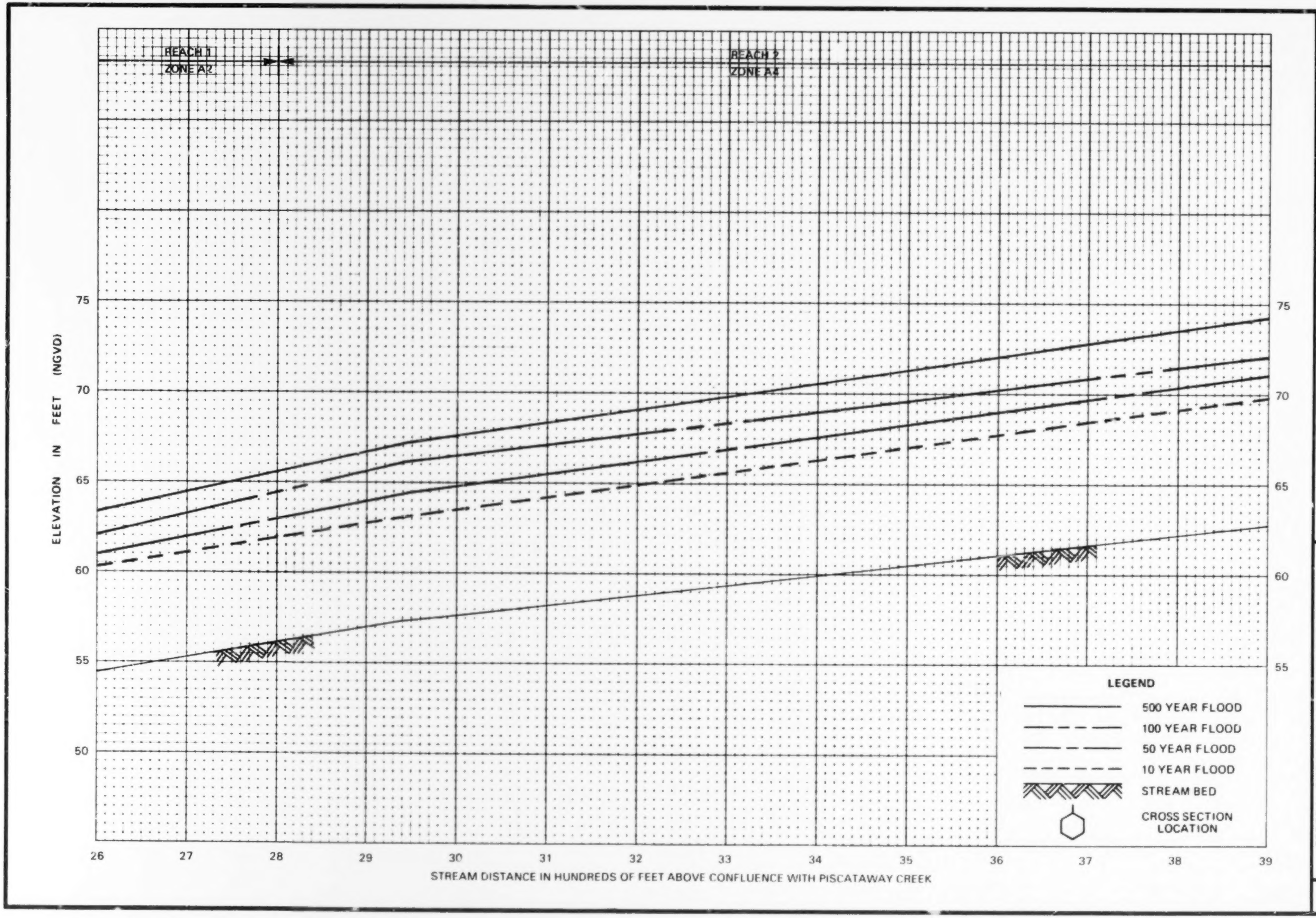
**BURCH BRANCH**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**
(UNINCORPORATED AREAS)

**29P**

90



## FLOOD PROFILES

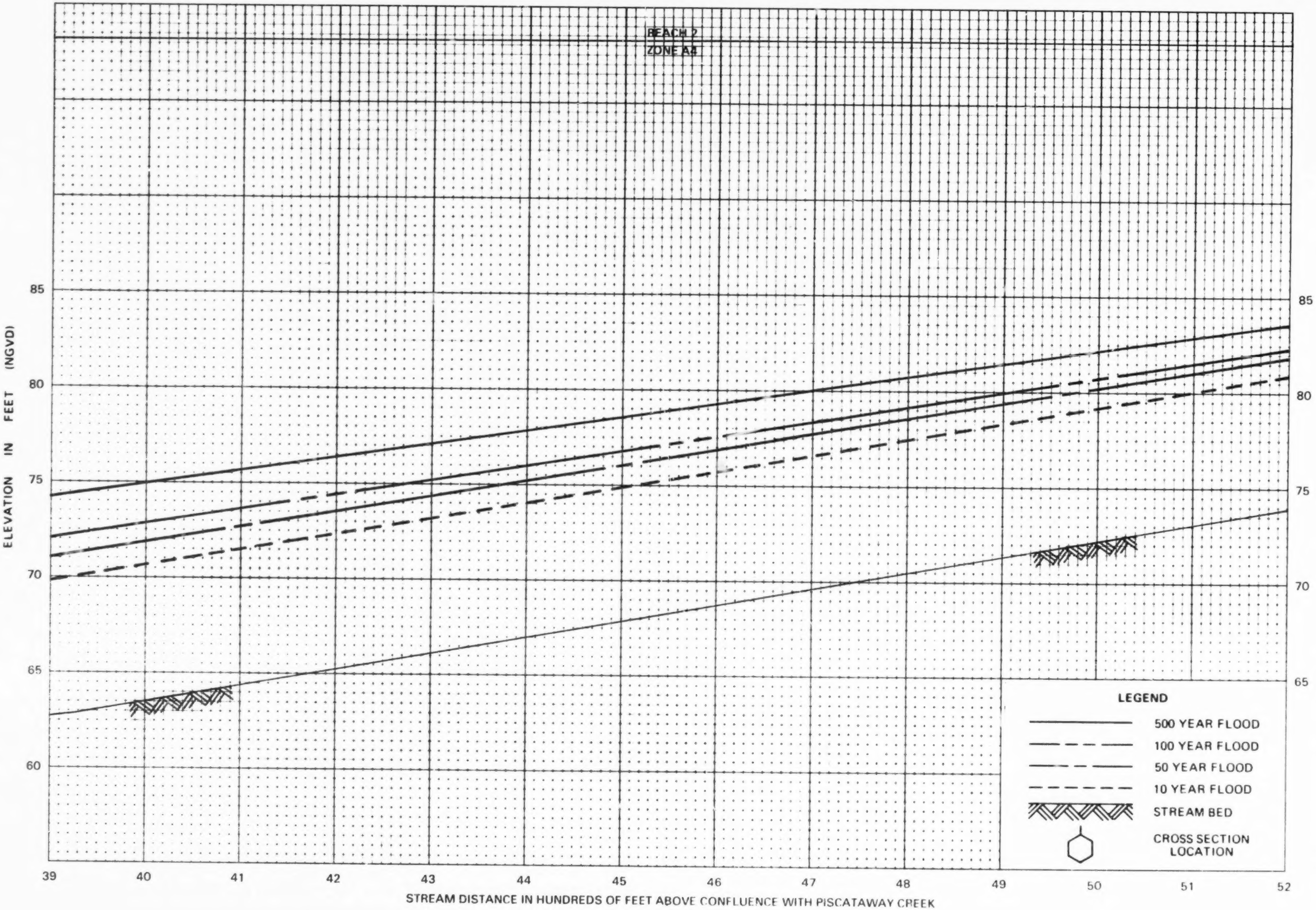
## BURCH BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

(UNINCORPORATED AREAS)

**30P**

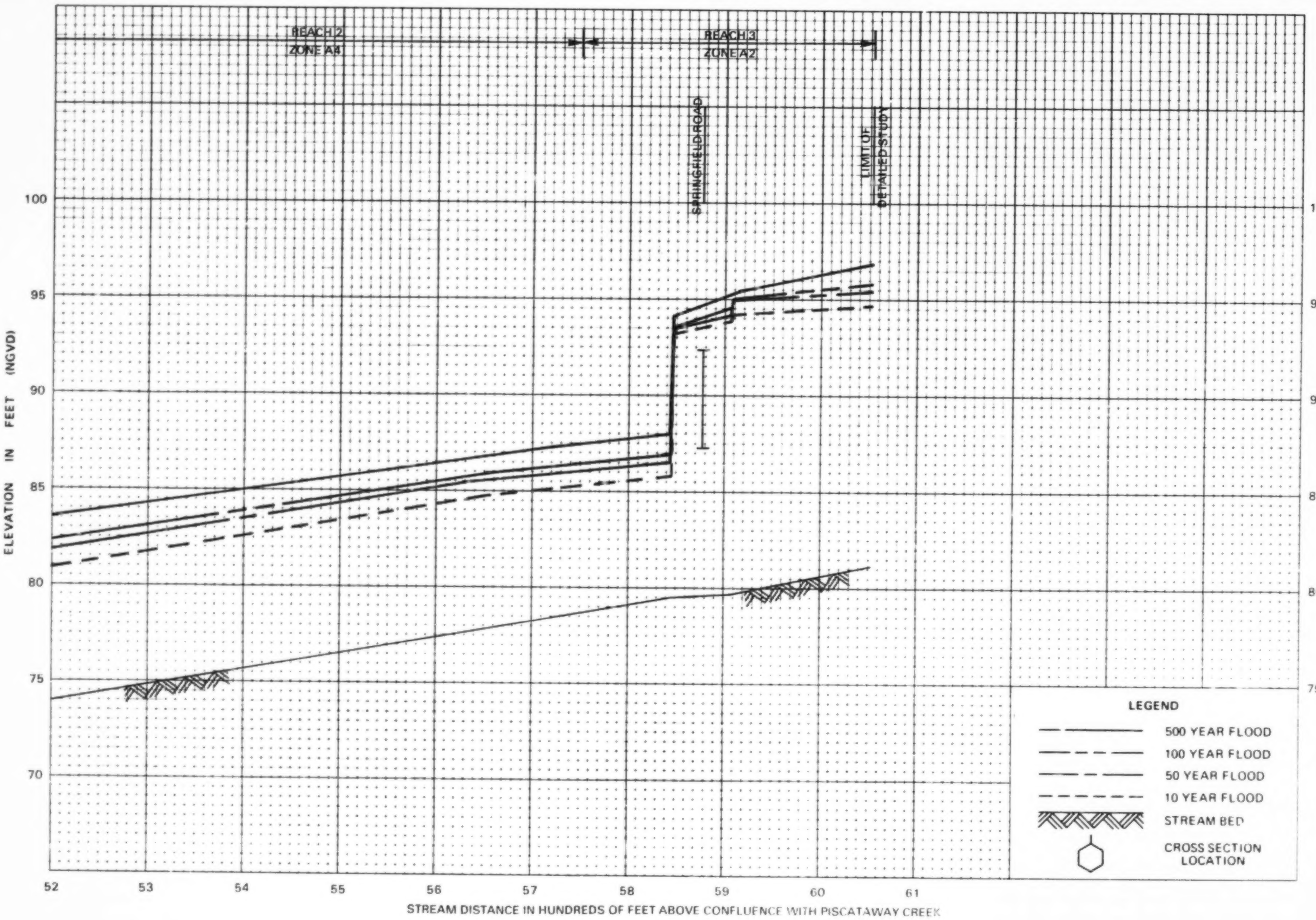


# FLOOD PROFILES

## BURCH BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**
(UNINCORPORATED AREAS)



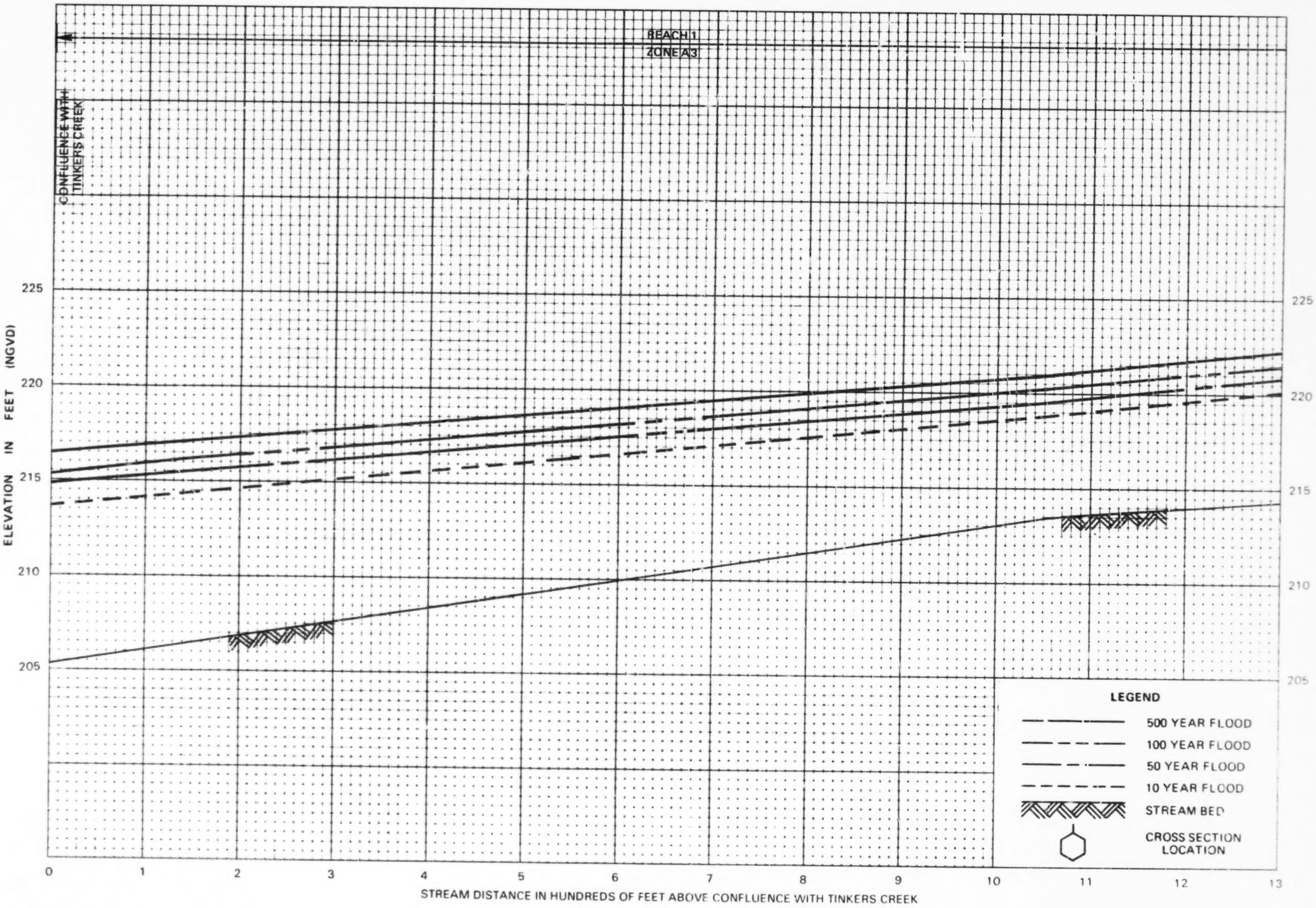
## FLOOD PROFILES

## BURCH BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**
(UNINCORPORATED AREAS)

**32P**

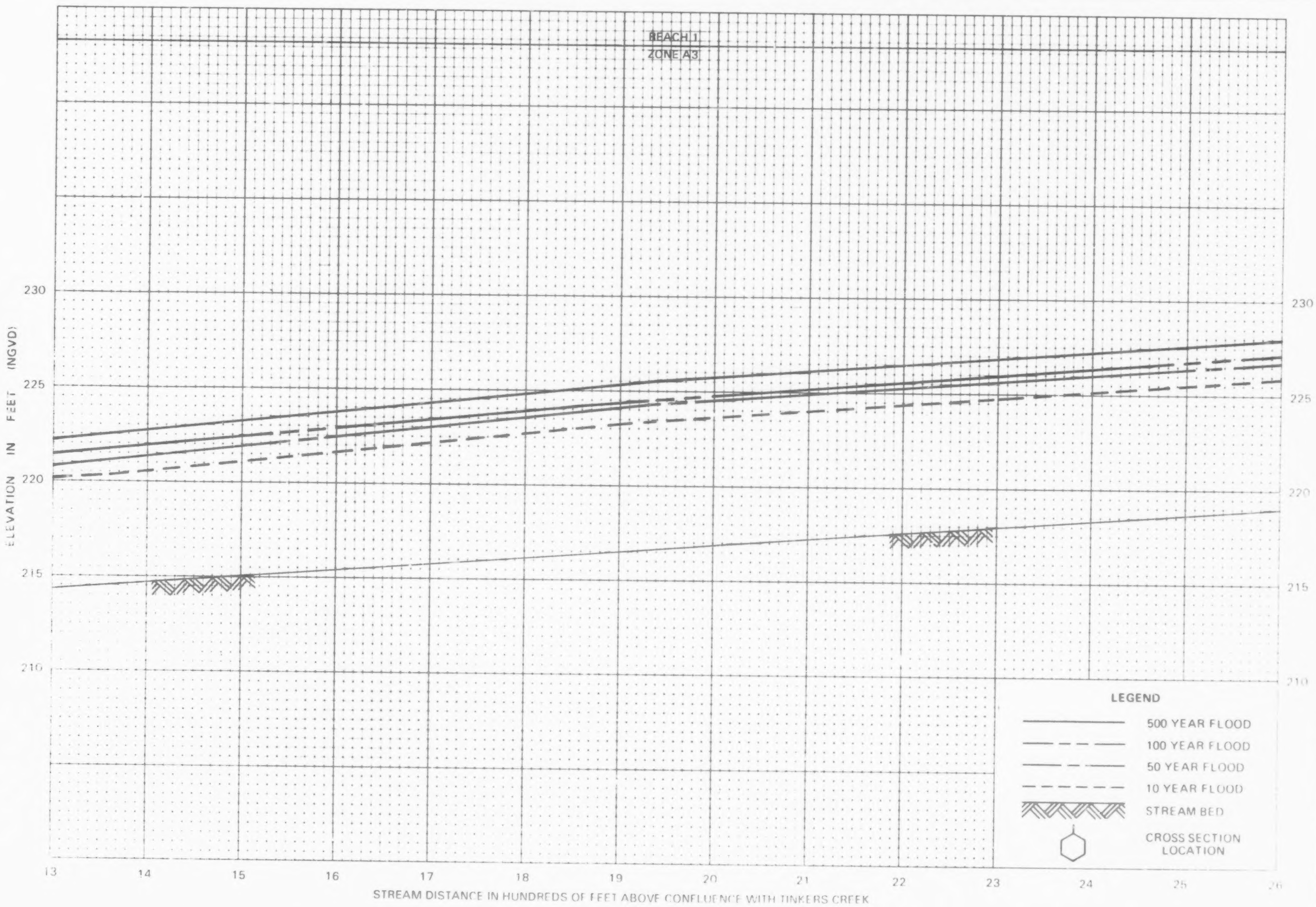


FLOOD PROFILES

MEETINGHOUSE BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

PRINCE GEORGE'S COUNTY, MD
(UNINCORPORATED AREAS)



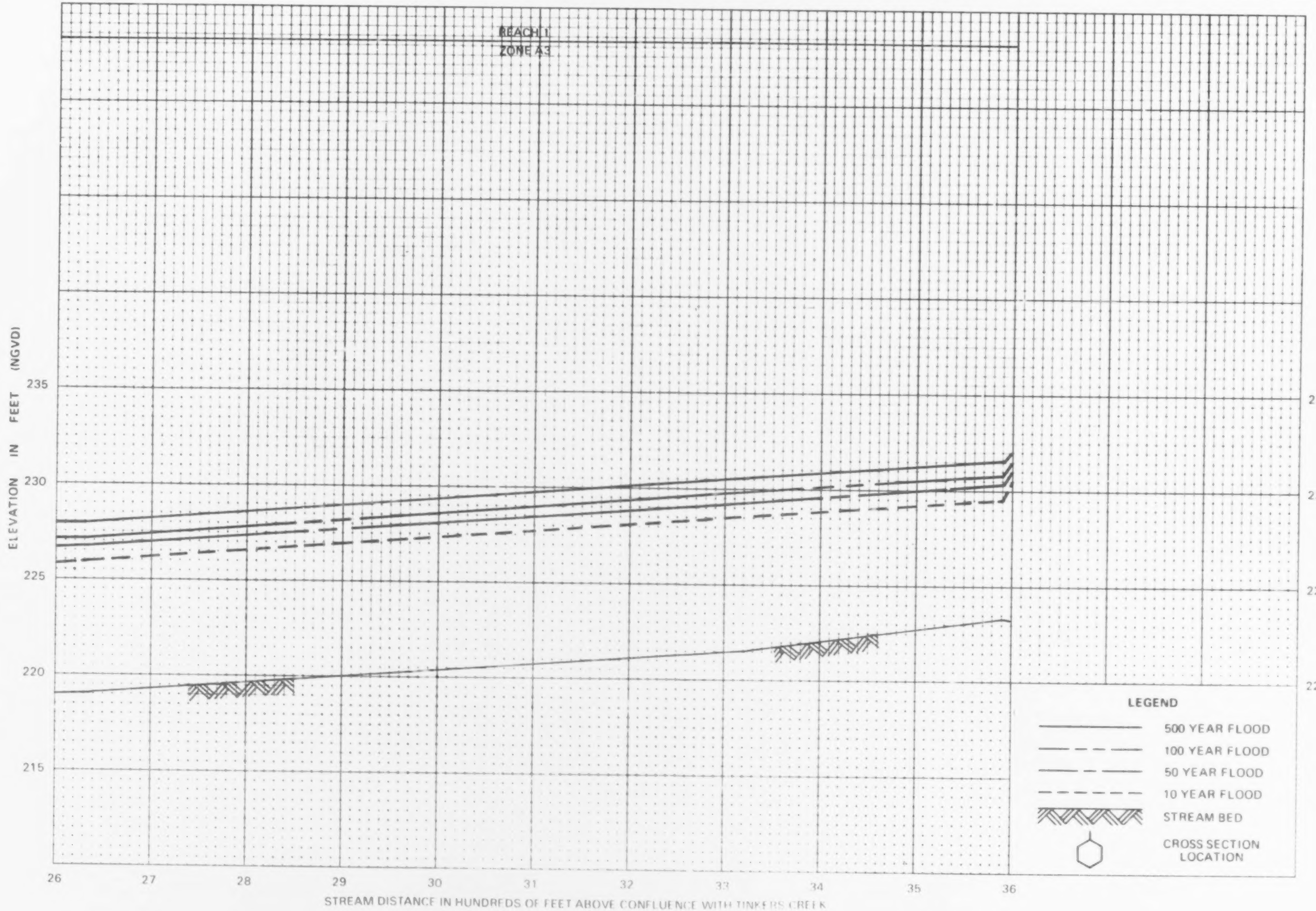
## FLOOD PROFILES

MEETINGHOUSE BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

(UNINCORPORATED AREAS)



## FLOOD PROFILES

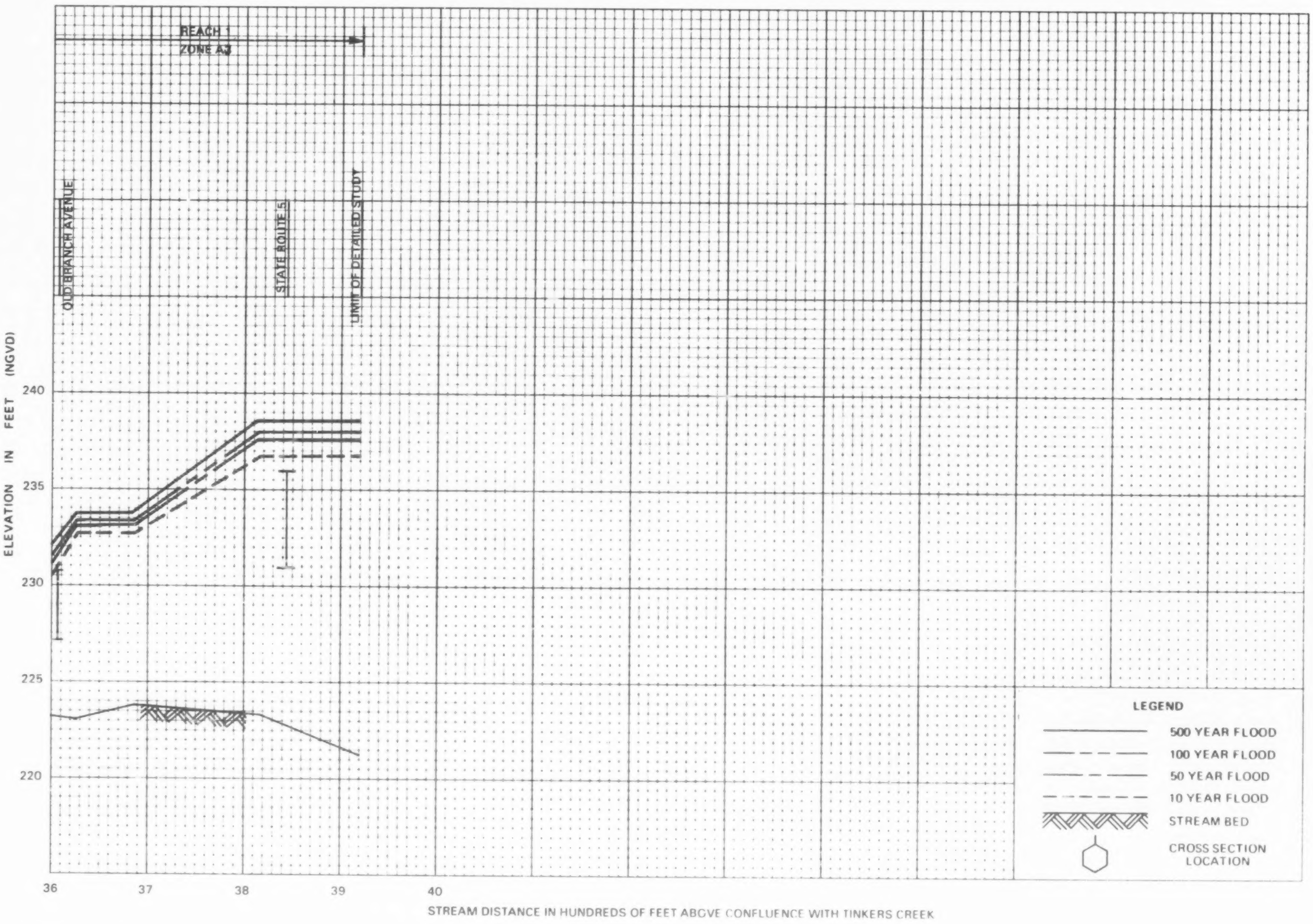
## MEETINGHOUSE BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

(UNINCORPORATED AREAS)

35P



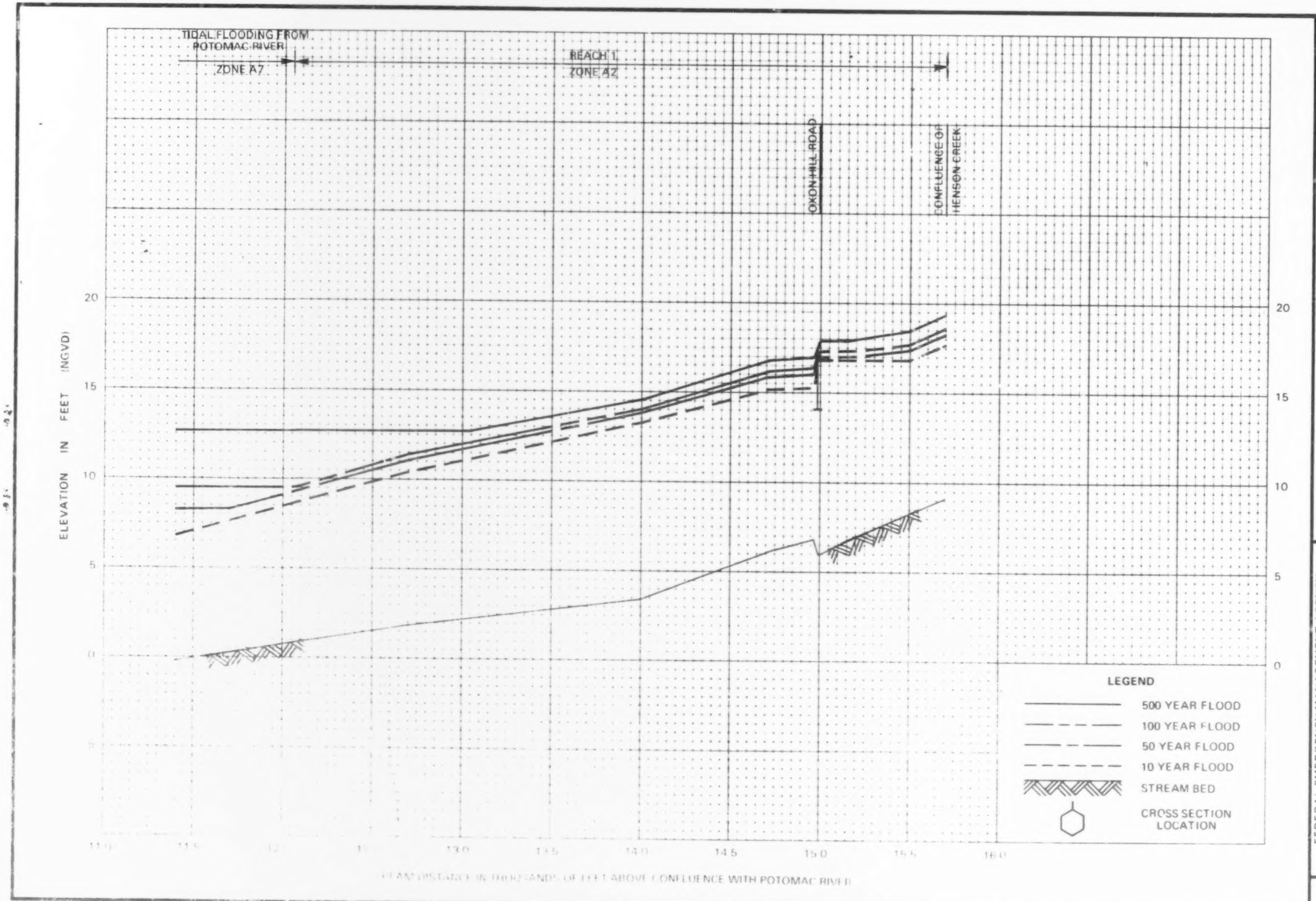
FLOOD PROFILES

MEETINGHOUSE BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

PRINCE GEORGE'S COUNTY, MD
(UNINCORPORATED AREAS)

36P



**FLOOD PROFILES**

**BROAD CREEK**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**PRINCE GEORGE'S COUNTY, MD**

**(UNINCORPORATED AREAS)**

**37P**

96